



ECOHABIT

AT STEVENS INSTITUTE OF TECHNOLOGY

SOLAR DECATHLON 2013 100% AS-BUILT SUBMISSION SET 22 AUGUST 2013



ECOHABIT
STEVENS SOLAR DECATHLON 2013

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3	FEB 14, 2013	CONSTRUCTION DOCUMENTS
4	APR 5, 2013	CD RESUBMISSION
5	AUG 22, 2013	AS-BUILT SUBMISSION

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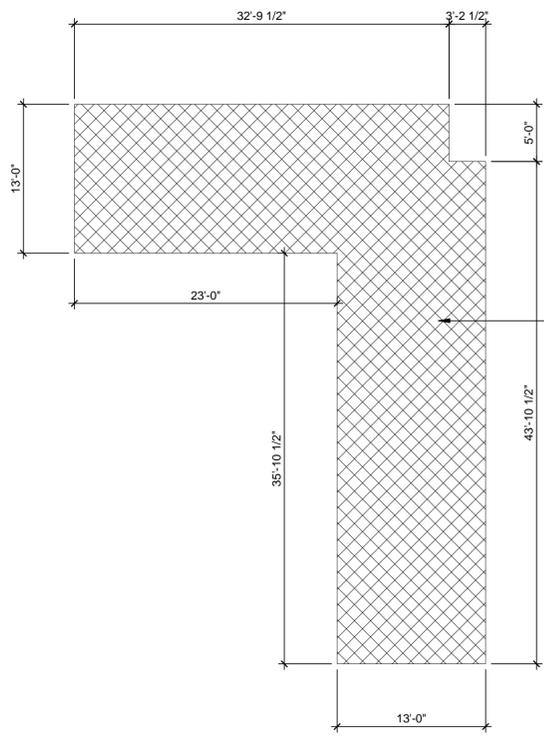
G-002

SYMBOL LEGEND	
MARK	DESCRIPTION
ROOM NAME 150 SF	AREA TAG
1 A101	CALL OUT TAG
℄	CENTERLINE
8 1/4"	DIMENSIONLINE
101	DOOR TAG
NAME ELEVATION	ELEVATION MARKER
1 A101	EXTERIOR ELEVATION TAG
0 2' 4' 8'	GRAPHIC SCALE
1 Ref A101 1 Ref	INTERIOR ELEVATION TAG
---	MODULE BREAK LINE
⊕	NORTH ARROW
12 21 31.A2	REFERENCE KEYNOTE TAG
ROOM NAME	ROOM/AREA TAG
A4 A101	SECTION TAG
?	SHEET KEYNOTE TAG
⊙	SPOT ELEVATION
1	STRUCTURAL GRID TAG
1L	WALL TAG
1T	WINDOW TAG
---	SOLAR ENVELOPE

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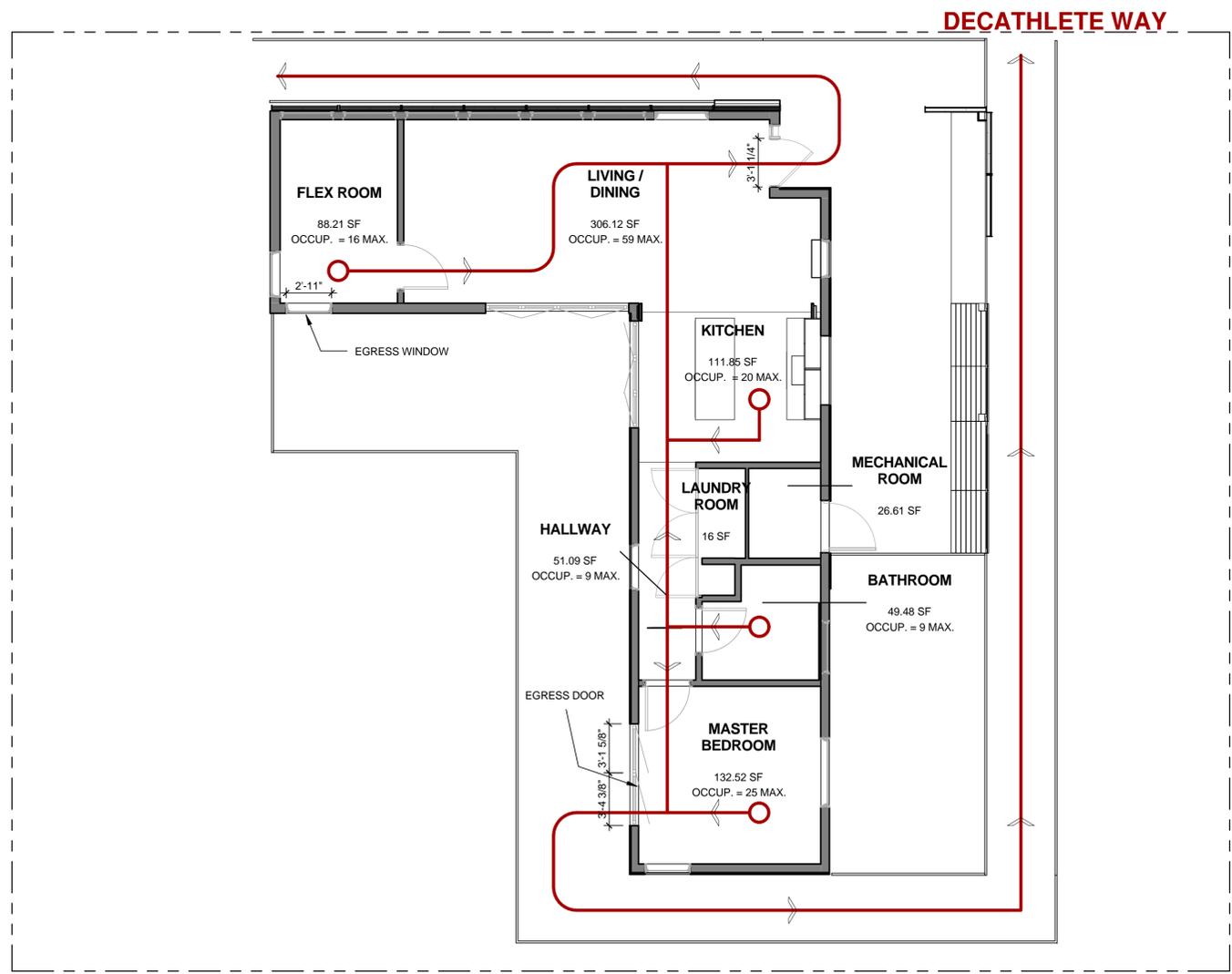
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FIRST FLOOR AREA = 918 SF

C1 ANSI AREA CALCULATIONS
1/8" = 1'-0"



A3 ROOM AREAS AND EGRESS PLAN
3/16" = 1'-0"

GENERAL SHEET NOTES

ALL AREA CALCULATIONS ARE MEASURED IN ACCORDANCE WITH ANSI STANDARD Z765-2003

TOTAL AREA = 918 SF

CALCULATION OF SQUARE FOOTAGE DEVELOPED BY USING THE PLANS OF THE HOUSE

THE FINISHED SQUARE FOOTAGE OF THE HOUSE IS REPORTED TO THE NEAREST WHOLE SQUARE FOOT FOR ABOVE-GRADE FINISHED SQUARE FOOTAGE AND FOR BELOW-GRADE FINISHED SQUARE FOOTAGE

FOR ALL ROOMS INCLUDED IN THE SQUARE FOOTAGE CALCULATION, THE FLOOR LOCATED UNDER SLOPING CEILING MEETS THE REQUIRED CLEARANCE OF AT LEAST 5 FEET (1.52 METERS); FURTHER, AT LEAST ONE-HALF OF THE SQUARE FOOTAGE IN THE ROOM HAS AT LEAST 7 FEET (2.13 METERS) IN HEIGHT

THE CALCULATION OF SQUARE FOOTAGE INCLUDES THE SQUARE FOOTAGE OF THE MECHANICAL ROOM, SINCE IT EMBODIES WALLS, FLOORS, AND CEILINGS THAT ARE SIMILAR TO THE REST OF THE HOUSE.

DRAWING KEY



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FINISHED SQUARE FOOTAGE COMPLIANCE & EGRESS PLAN

G-101



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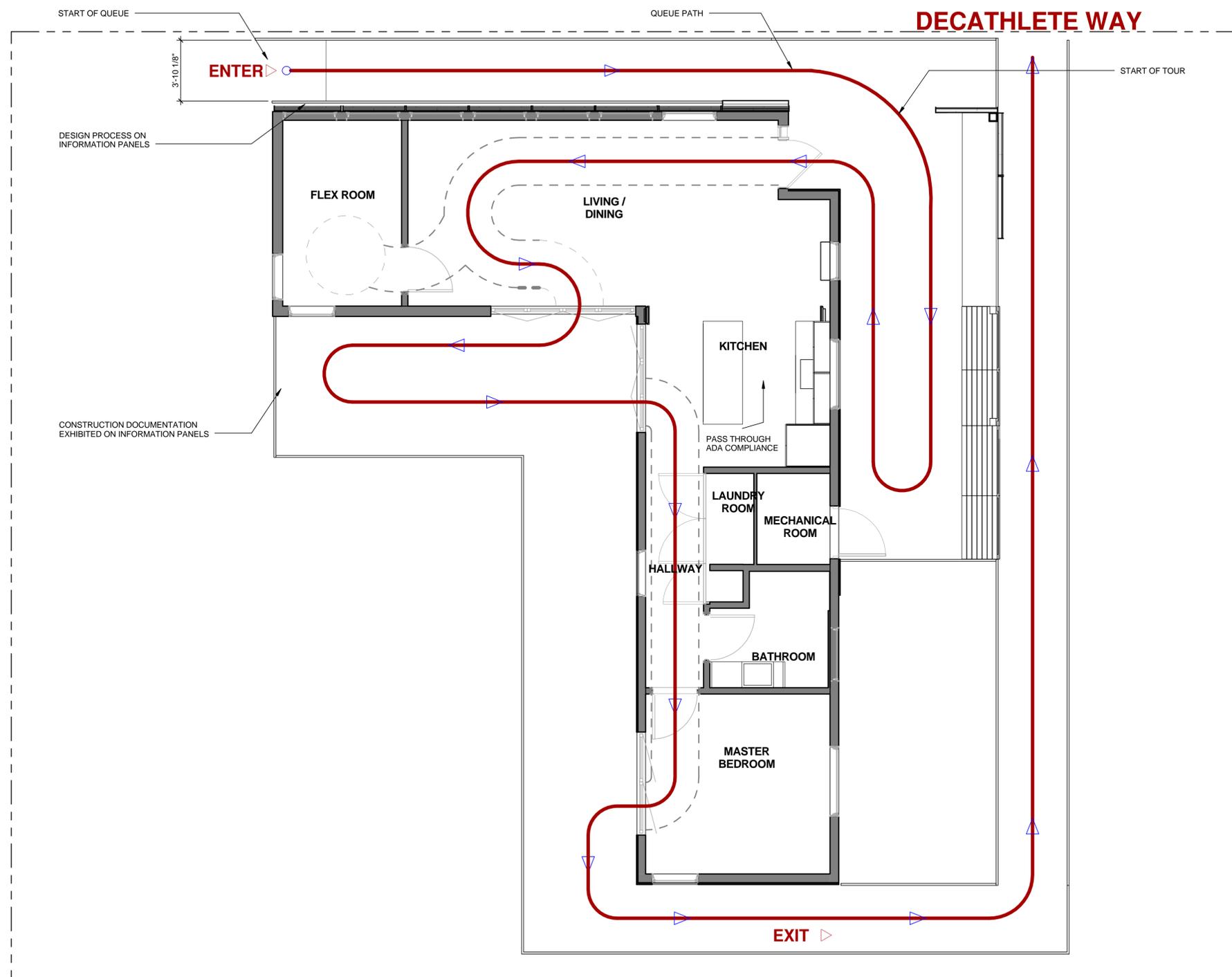
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ADA TOUR ROUTE COMPLIANCE PLAN

G-103



A1 ADA TOUR ROUTE COMPLIANCE PLAN
1/4" = 1'-0"



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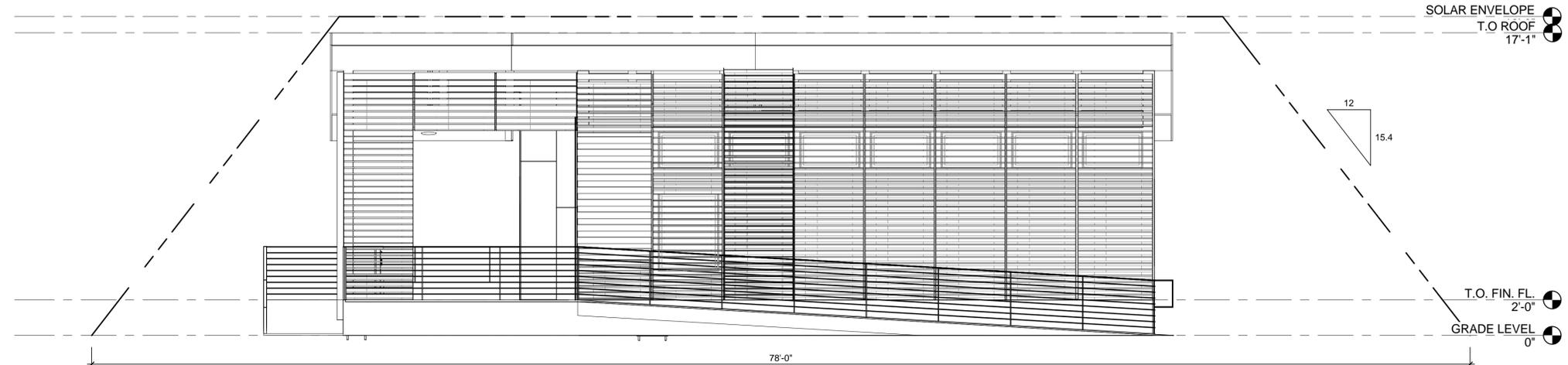
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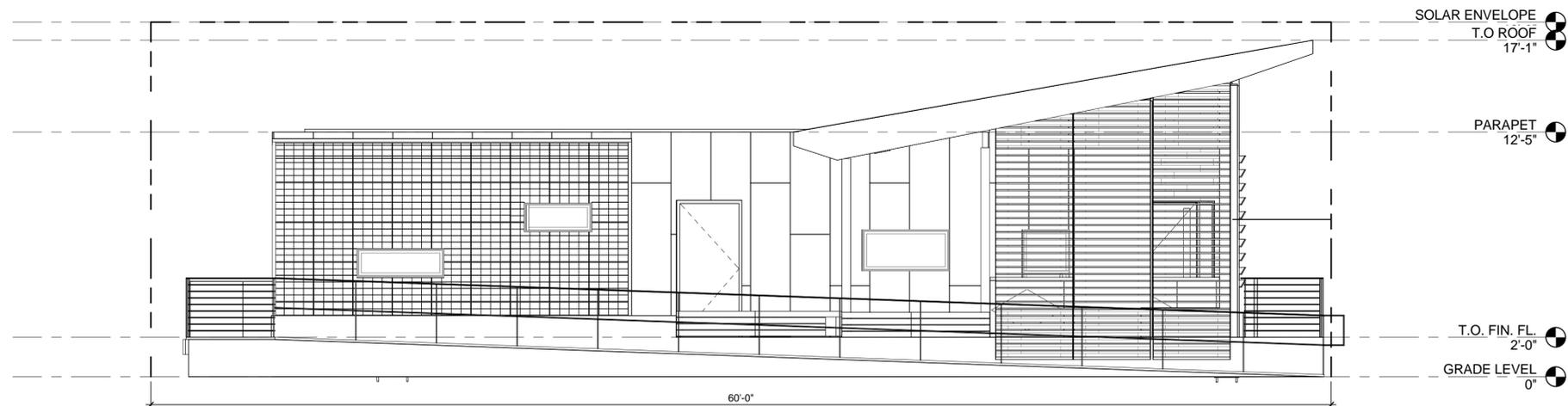
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SHEET TITLE
**SOLAR ENVELOPE
COMPLIANCE
ELEVATIONS**

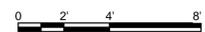
G-201



C1 SOLAR ENVELOPE - NORTH
1/4" = 1'-0"



A1 SOLAR ENVELOPE - EAST
1/4" = 1'-0"





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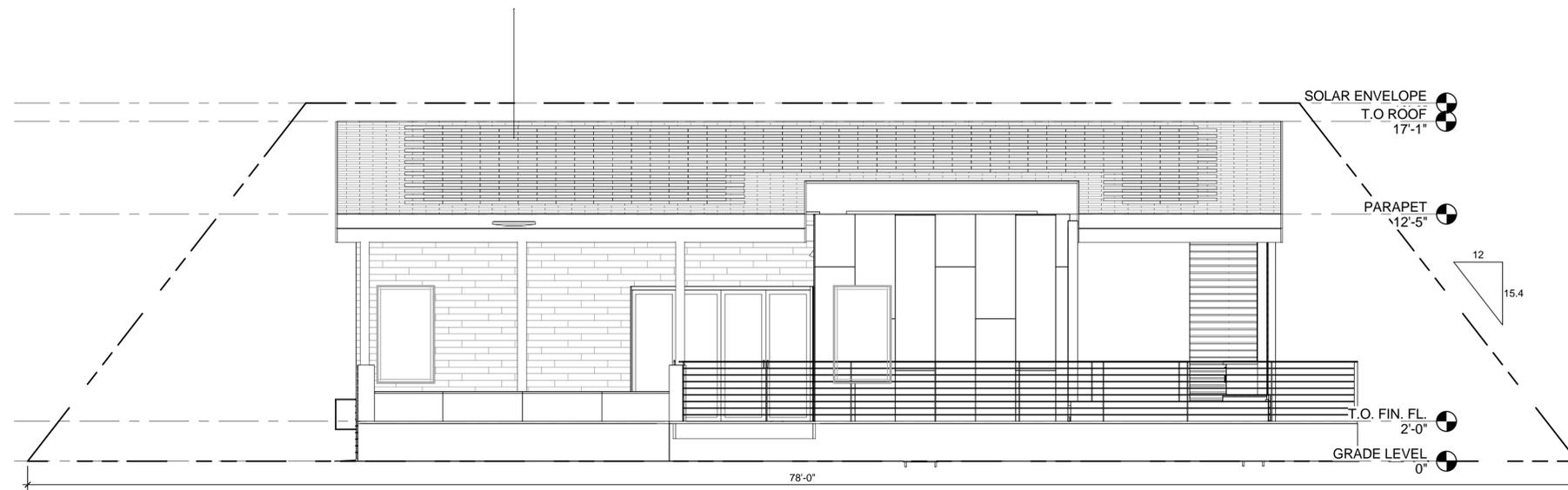
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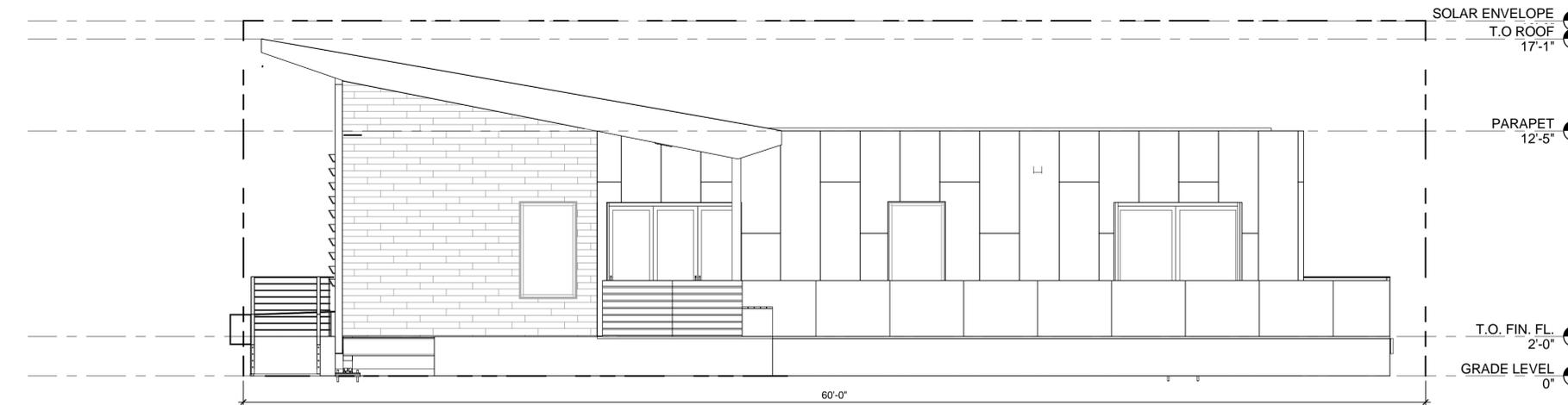
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**SOLAR ENVELOPE
COMPLIANCE
ELEVATIONS**

G-202



D1 SOLAR ENVELOPE - SOUTH
1/4" = 1'-0"



A1 SOLAR ENVELOPE - WEST
1/4" = 1'-0"





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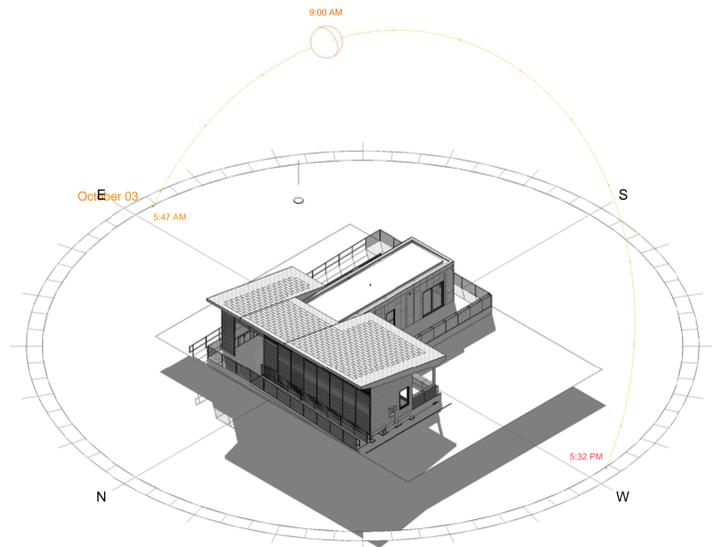
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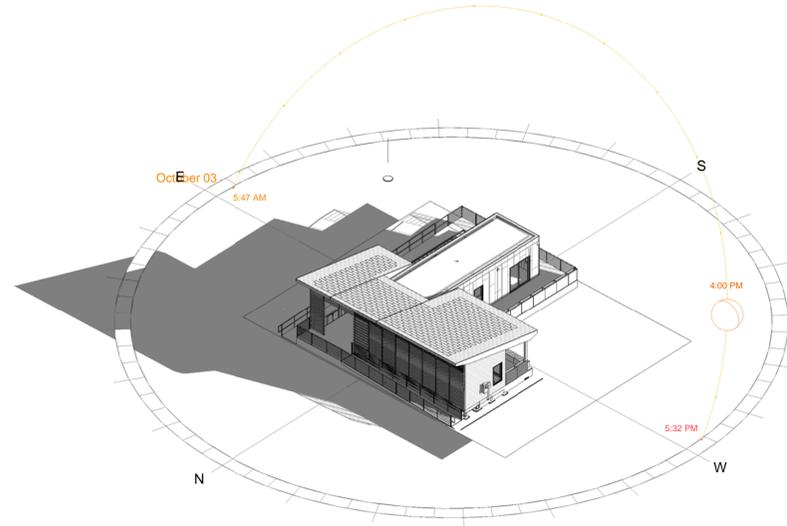
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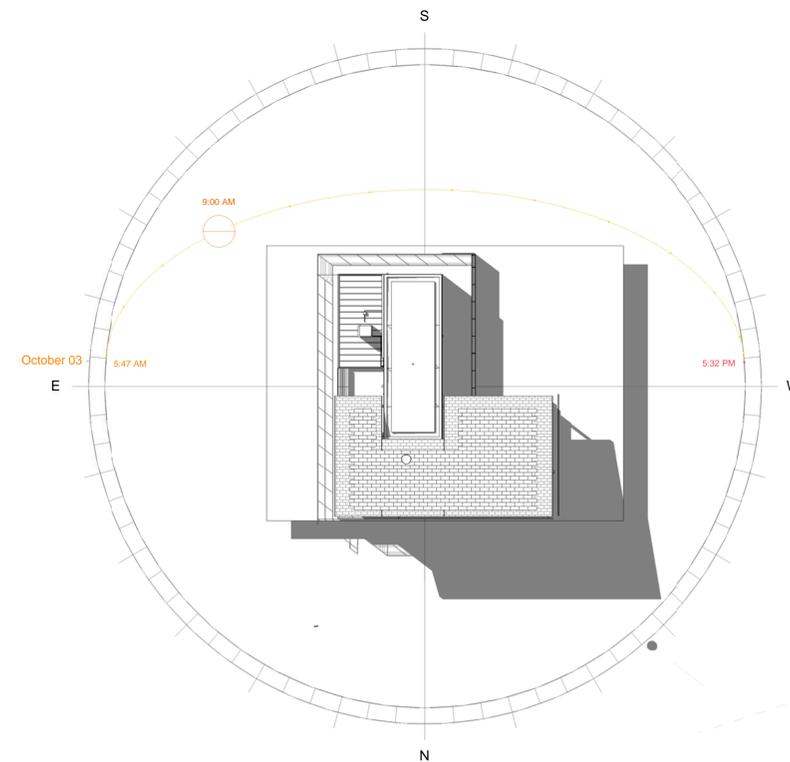
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SHADING DIAGRAMS



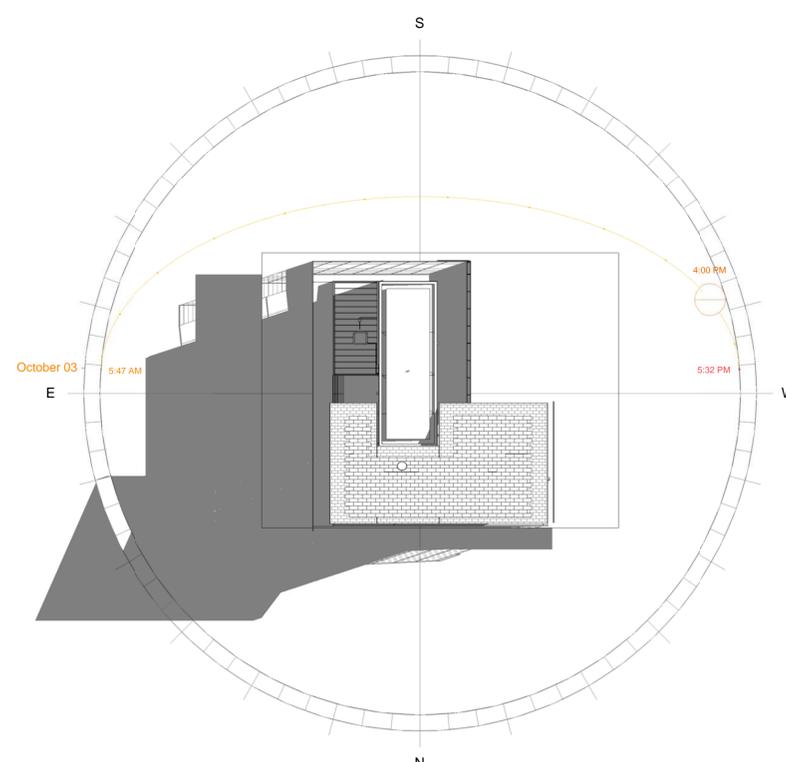
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C4 SHADED PERSPECTIVE: 10/03/2012 - 4:00 PM



A1 SHADED PLAN: 10/03/2012 - 9:00 AM



A4 SHADED PLAN: 10/03/2012 - 4:00 PM

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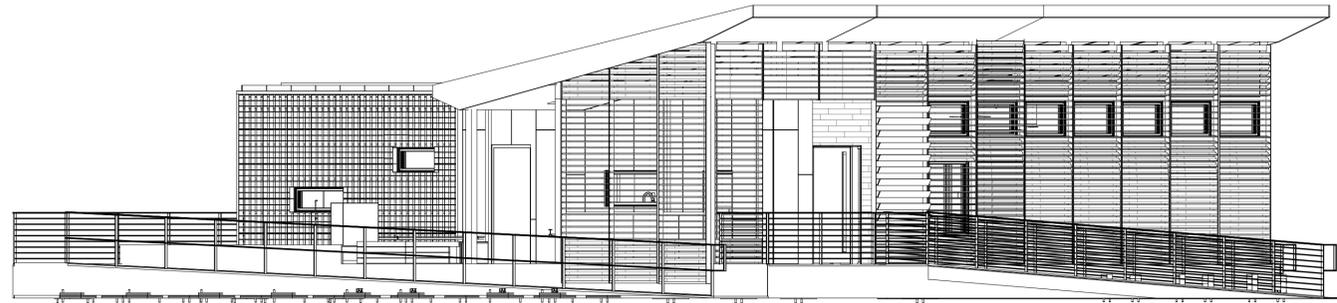
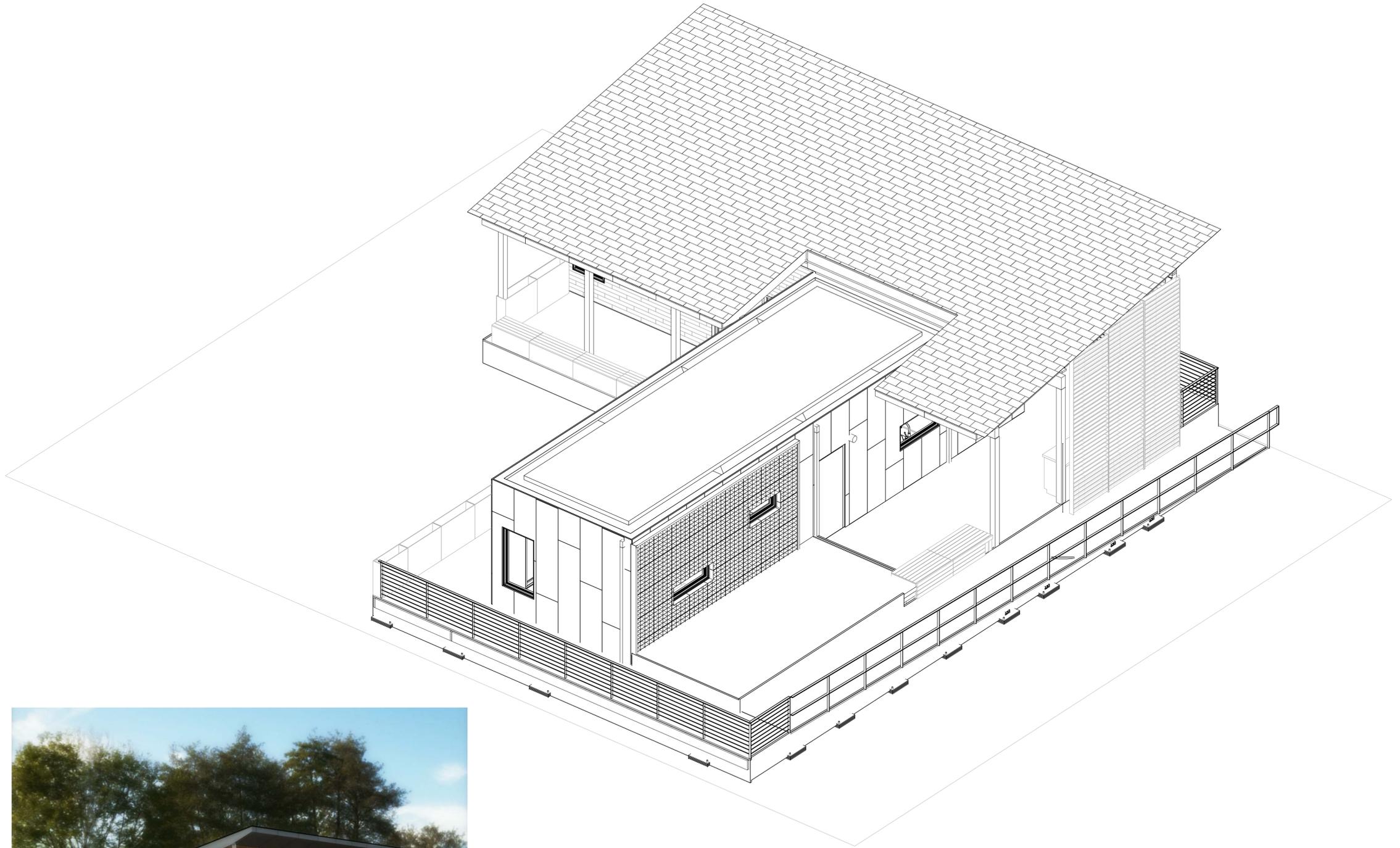


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**GENERAL PROJECT
RENDERINGS**

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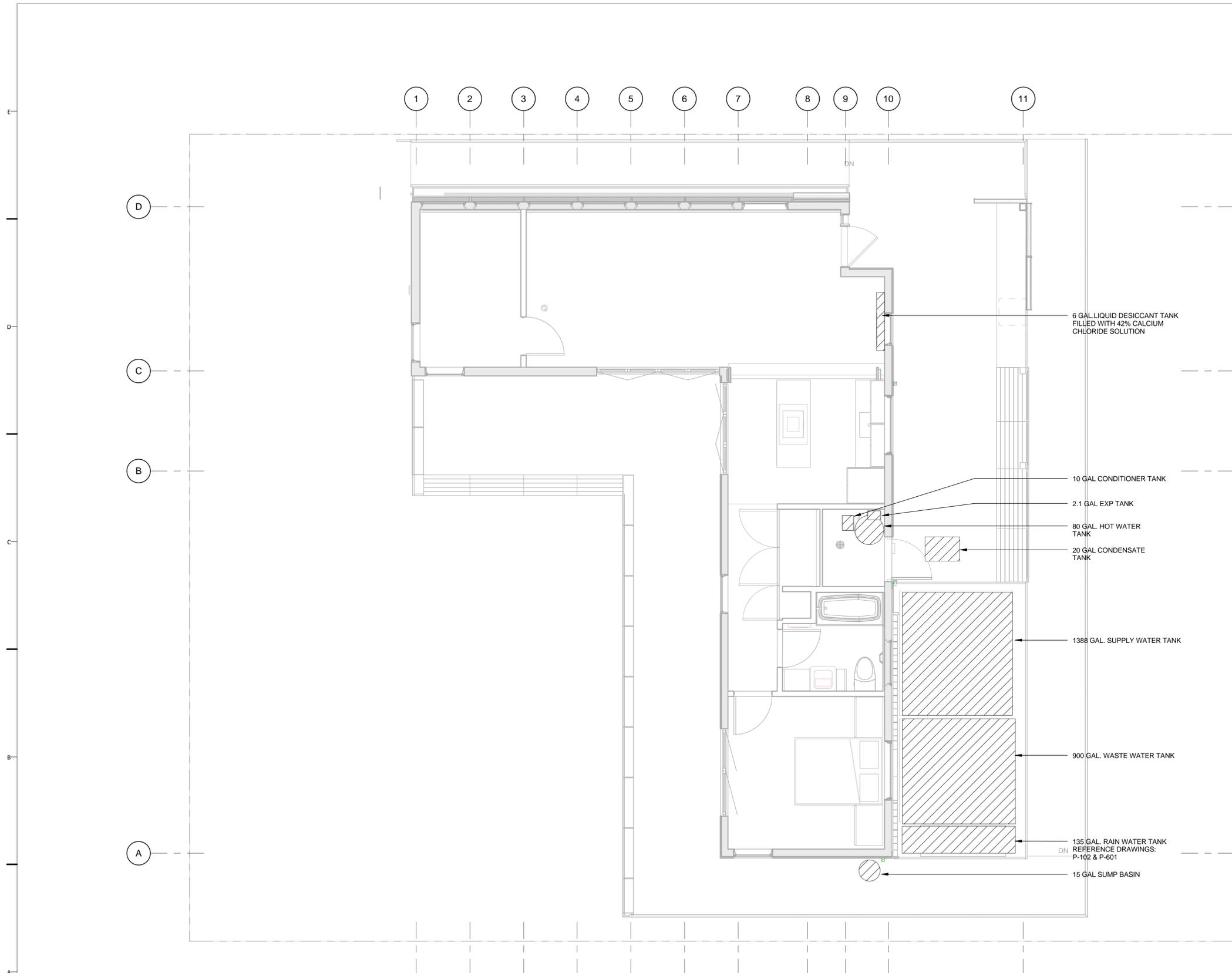


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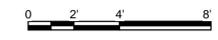
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SHEET TITLE
**LIQUID LOCATION AND
SPILL CONTAINMENT
PLAN**

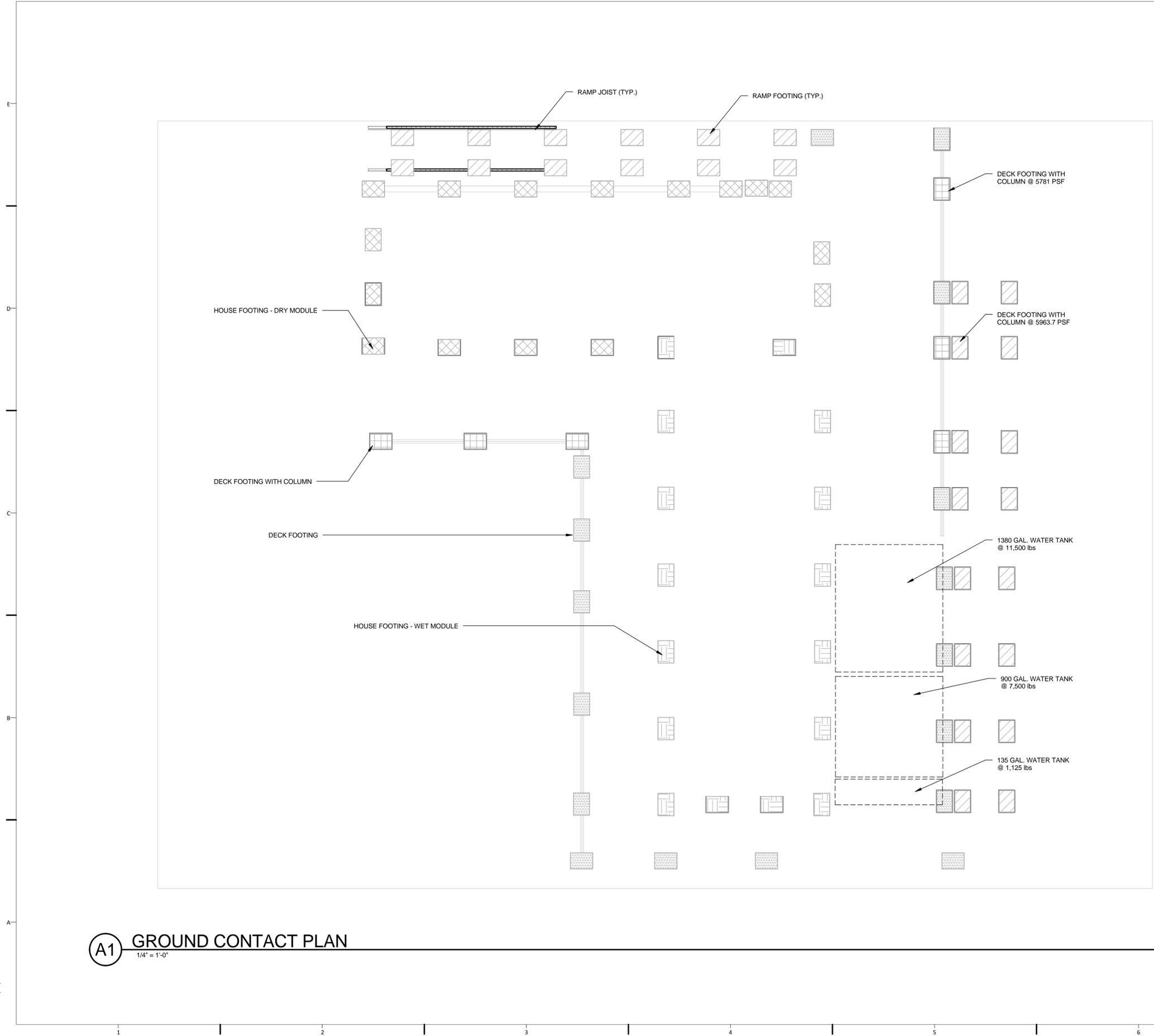
H-101



A1 LIQUID CONTAINER PLAN
1/4" = 1'-0"



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GENERAL SHEET NOTES

- FOOTING BASE PLATE SIZE
 HOUSE FOOTING (TYP.) 16"x16"
 DECK FOOTING (TYP.) 16"x16"
- BEARING PRESSURE
 HOUSE FOOTING (TYP.)
 WET MODULE 5073.3 PSF
 DRY MODULE 4174.3 PSF
 DECK FOOTING (TYP.)
 WITH COLUMN (TYP.) 4720.6 PSF
 RAMP FOOTING (TYP.) 1183.9 PSF
 RAMP JOIST (TYP.) 1287.7 PSF
 600 GAL WATER TANK 1.57 PSF
 900 GAL WATER TANK 2.12 PSF
 1500 GAL WATER TANK 2.11 PSF
 150 GAL WATER TANK 1.18 PSF



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DRAWING KEY

	DECK FOOTING
	DECK FOOTING WITH COLUMN
	HOUSE FOOTING - WET MODULE
	HOUSE FOOTING - DRY MODULE
	RAMP FOOTING

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GROUND CONTACT PLAN

C-101



A1 GROUND CONTACT PLAN
 1/4" = 1'-0"

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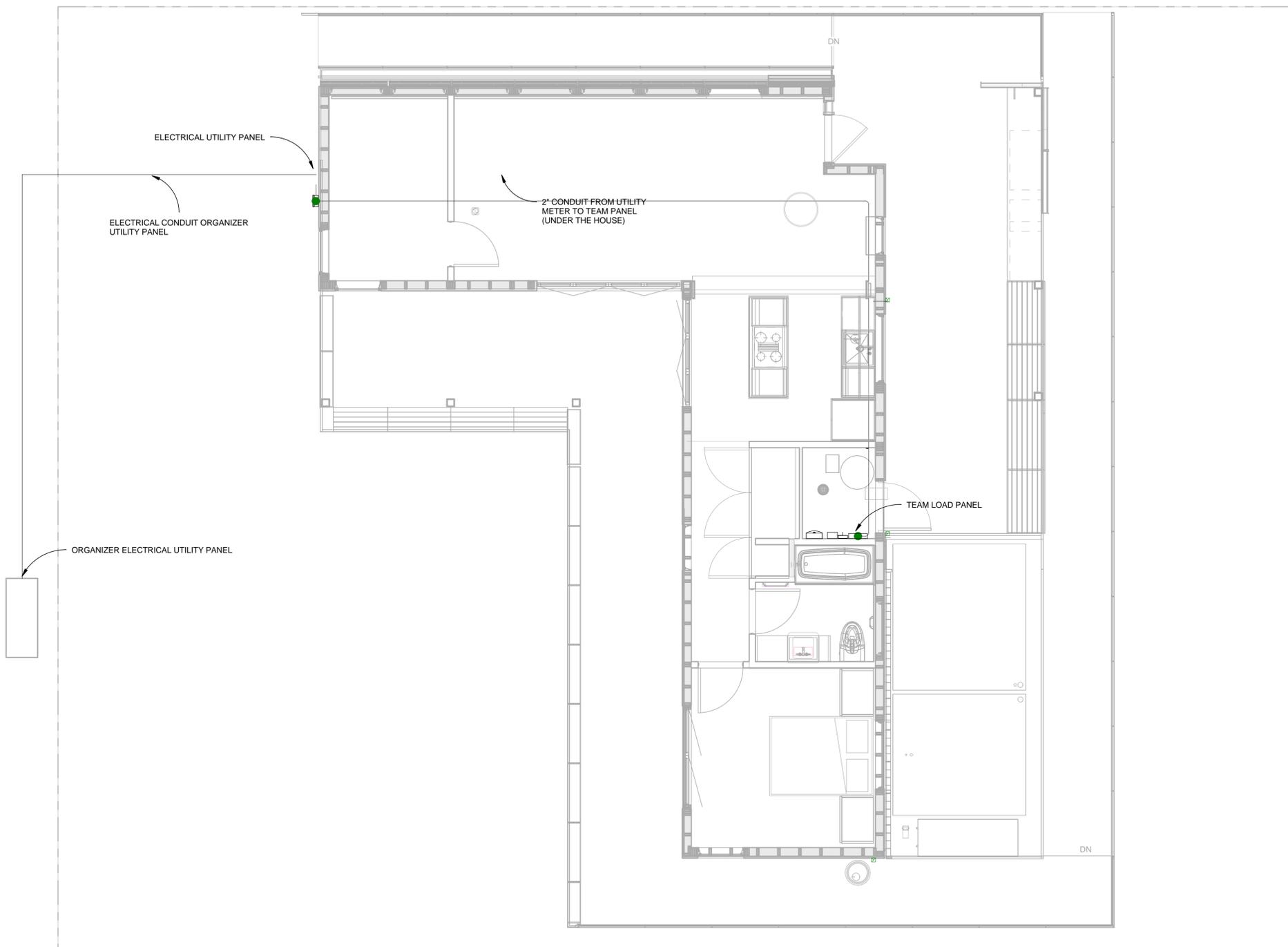


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SITE UTILITY PLAN

C-103



A1 SITE UTILITY PLAN
1/4" = 1'-0"



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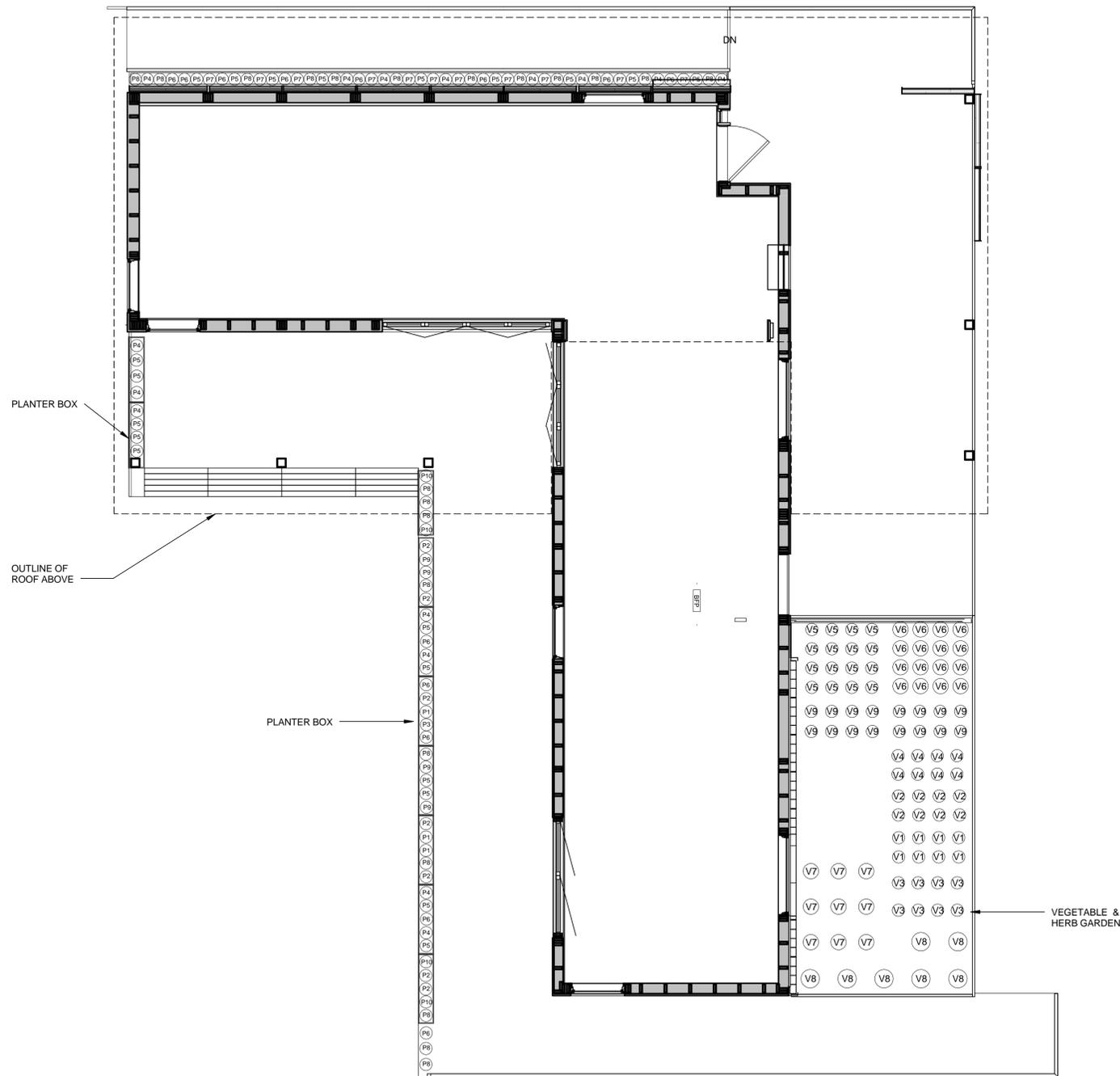
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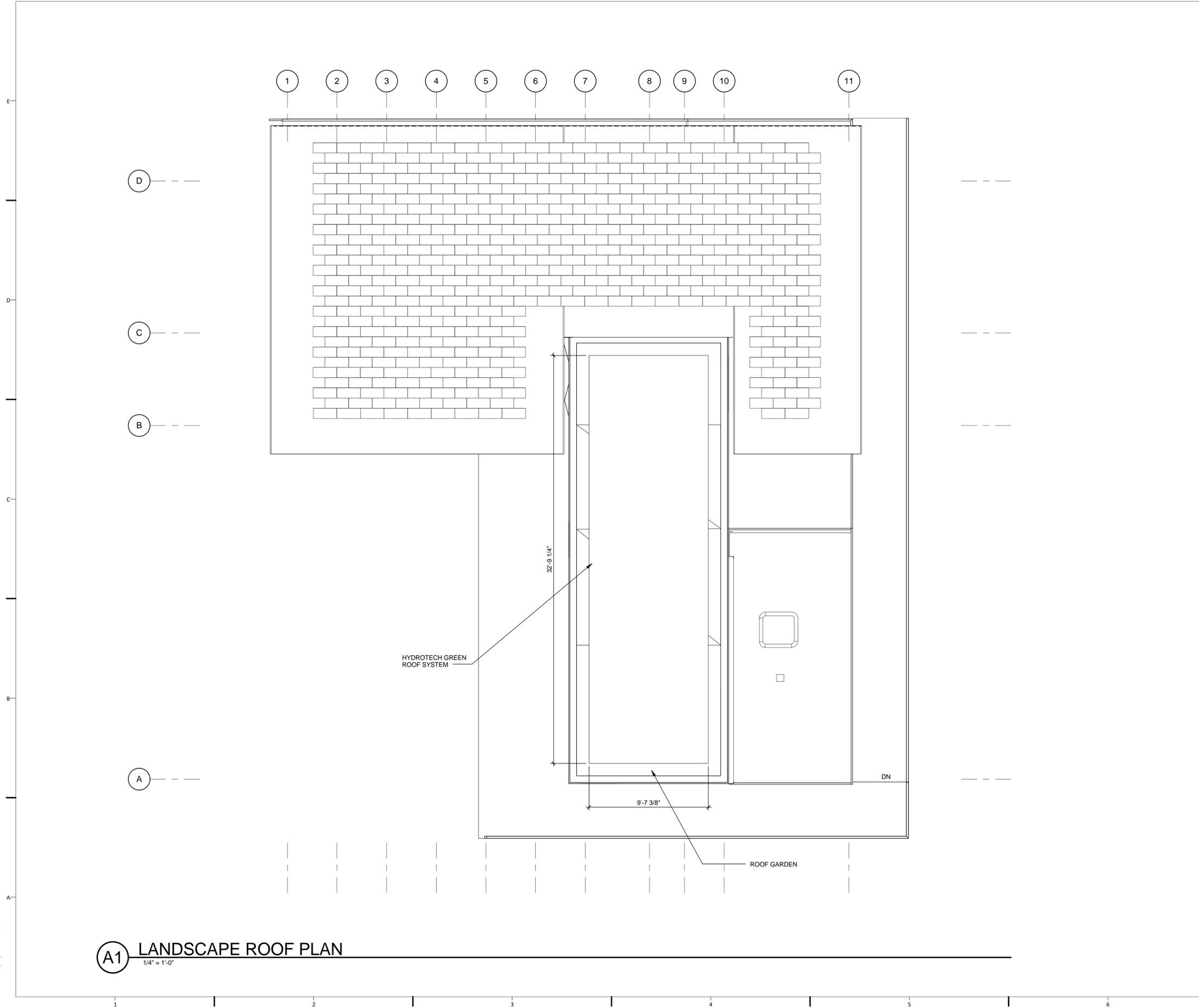
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**LANDSCAPE AND
PLANTING SITE PLAN**

L-101





GENERAL SHEET NOTES

GENERAL SHEET NOTES

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LANDSCAPE AND
PLANTING ROOF PLAN

L-102

A1 LANDSCAPE ROOF PLAN
1/4" = 1'-0"

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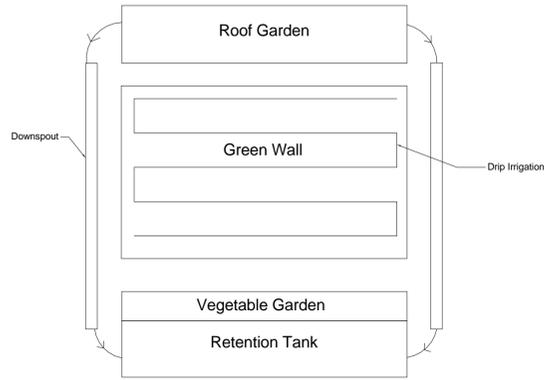
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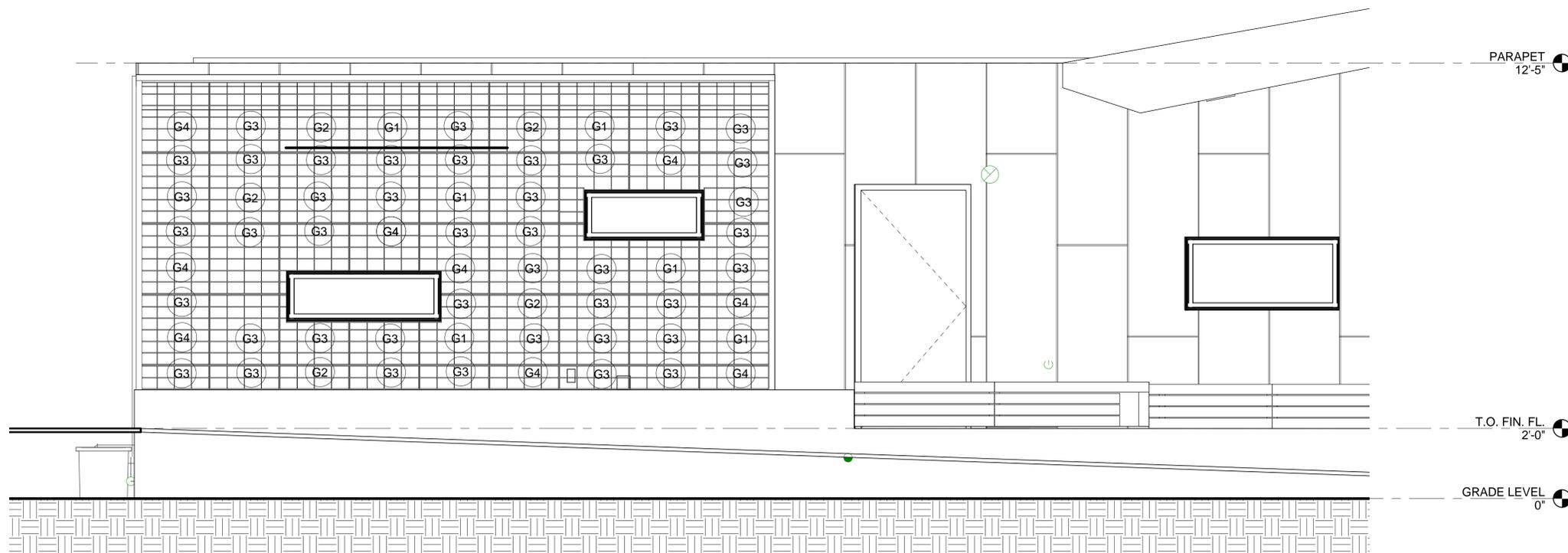
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**LANDSCAPE IRRIGATION
AND GREYWATER PLAN**

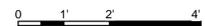
L-103



D1 IRRIGATION DIAGRAM
3" = 1'-0"



A1 GREEN WALL ELEVATION
1/2" = 1'-0"



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PLANTING SCHEDULES

L-602

PLANTER SCHEDULE					
MARK	LATIN NAME	COMMON NAME	TYPE	QUANTITY	POT SIZE
P1	CEANOTHUS 'JOYCE COULTER'	WILD LILAC	SHRUB	3	6 IN
P2	KALIMERIS PINNATIFIDA	FALSE ASTER	HERBACIOUS PERENNIAL	7	14 IN
P3	CUPHEA HYSSOPIFOLIA	FALSE HEATHER	BROADLEAF EVERGREEN	4	10 IN
P4	MIMULUS 'JACK'	RED MONKEYFLOWER	SHRUB	15	8 IN
P5	MIMULUS 'TRISH'	PINK MONKEYFLOWER	SHRUB	20	8 IN
P6	POLYGALA FRUTICOSA	DWARF SWEET PEA BUSH	SHRUB	13	14 IN
P7	AGAPANTHUS AFRICANUS	AFRICAN LILY	BULB	11	8 IN
P8	ERYSIMUM INSULAR	ISLAND WALLFLOWER	PERENNIAL	20	10 IN
P9	PENSTEMON 'APPLE BLOSSOM'	APPLE BLOSSOM PENSTEMON	PERENNIAL	4	8 IN
P10	GAILLARDIA X GRANDIFLORA	BLANKET FLOWER	HERBACIOUS PERENNIAL	4	6 IN

VEGETABLE/HERB GARDEN SCHEDULE					
MARK	LATIN NAME	COMMON NAME	TYPE	QTY.	POT SIZE
V1	ROSEMARYINUS OFFICINALIS	ROSEMARY	HERBACIOUS	8	N/A
V2	ORIGANUM VULGARE	OREGANO	HERBACEOUS	8	N/A
V3	CORIANDRUM SATIVUM	CILANTRO	HERBACIOUS	8	N/A
V4	PETROSELINUM CRISPUM	PARSLEY	HERBACIOUS	8	N/A
V5	DAUCUS CAROTA	CARROTS	VEGETABLE	16	N/A
V6	PHASEOLUS VULGARIS	COMMON BEAN	VEGETABLE	16	N/A
V7	CAPSIUM ANNUM	BELL PEPPER	VEGETABLE	9	N/A
V8	CUCURBITA PEPO	ZUCCHINI	VEGETABLE	7	N/A
V9	RAPHANUS SATIVUS	RADISH	VEGETABLE	16	N/A

GREEN WALL SCHEDULE					
MARK	LATIN NAME	COMMON NAME	TYPE	QTY.	POT SIZE
G1	ALTERNANTHERA FICOIDEA 'ROSEA NANA'	DWARF ROSE JOSEPH'S COAT	ANNUALS	6	N/A
G2	DROSANTHEMUM FLORIBUNDUM	ICE PLANT	HERBACIOUS PERENNIAL	5	N/A
G3	PACHYSANDRA TERMINALIS	JAPANESE PACHYSANDRA	HERBACIOUS PERENNIAL	42	N/A
G4	SEDUM SIEBOLDII	OCTOBER DAPHNE, STONECROP	PERENNIAL	9	N/A

GENERAL NOTES:

- THE PROJECT SHALL CONFORM TO THE 2012 INTERNATIONAL BUILDING CODE, THE 2012 INTERNATIONAL RESIDENTIAL BUILDING CODE, ALONG WITH THE ASCE STANDARD 7-10: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES. ALL LOADS SHOWN ARE UNFACTORED.
- ALL STRUCTURAL WORK SHALL CONFORM TO THE PROJECT SPECIFICATIONS, ALL DRAWING NOTES, AND APPLICABLE REFERENCE STANDARDS. THE SCOPE OF WORK IS NOT SOLELY DEFINED BY THESE DOCUMENTS.
- TYPICAL DETAILS APPLY THROUGHOUT THE PROJECT, EVEN IF NOT SPECIFICALLY REFERENCED IN PLANS OR DETAILS. DETAILS OF CONSTRUCTION NOT FULLY SHOWN OR NOTED ON THE DRAWINGS NOR CALLED OUT IN THE SPECIFICATIONS SHALL BE OF THE SAME SIZE AND CHARACTER AS FOR SIMILAR CONDITIONS WHICH ARE SHOWN AND NOTED.
- DO NOT USE SCALED DIMENSIONS; USE ONLY WRITTEN DIMENSIONS. WHERE NO DIMENSION IS PROVIDED, CONSULT THE ARCHITECT FOR CLARIFICATIONS BEFORE PROCEEDING WORK.
- SEE ARCHITECTURAL DRAWINGS FOR SITE POSITIONING AND PROJECT DATUM REFERENCE (0'-0") SHOWN ARCHITECTURAL DRAWINGS.
- THE CONSTRUCTION MANAGER SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF PERSONS AND PROPERTY AND THE MEANS AND METHODS OF CONSTRUCTION.
- STRUCTURAL ELEMENTS SHALL BE CENTERED ABOUT GRIDLINES OR DIMENSION LINES, UNLESS OTHERWISE NOTED.
- ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, ETC. REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN ON PLAN. DISCREPANCIES AND/OR INTERFACES SHALL BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ENGINEERED DESIGNS AND COORDINATION OF FINAL SUPPORT DETAILS OF NON-STRUCTURAL ITEMS IDENTIFIED IN CONTRACT DOCUMENTS INCLUDING; BUT NOT LIMITED TO:
 - MECHANICAL EQUIPMENT ATTACHMENTS
- DETAILS SHOWN IN STRUCTURAL DRAWINGS ARE INDICATIVE IN NATURE. CONTRACTOR TO DESIGN, COORDINATE, AND/OR PROVIDE ADDITIONAL FRAMING AS REQUIRED.
- OPENINGS SHALL NOT BE MADE IN ANY STRUCTURAL MEMBER UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
- DEFICIENT WORK AND WORK NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AS IDENTIFIED BY ARCHITECT OR INSPECTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COMPENSATE OWNER FOR SERVICES ARISING FROM DEFICIENT WORK.

DESIGN LOADS:

BUILDING LOADS

- STRUCTURAL DESIGN OF THIS BUILDING IS IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE, THE 2012 INTERNATIONAL RESIDENTIAL BUILDING CODE, ALONG WITH THE ASCE STANDARD 7-10: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
 - LIVE ASSEMBLY LOAD* 50 PSF *NOT CONSIDERED RESIDENTIAL LOADING
 - SUPERIMPOSED DEAD LOADS*

DRY MODULE ROOF ASSEMBLY	55 PSF	
WET MODULE ROOF ASSEMBLY	68 PSF	*SEE S-611
INTERIOR FLOOR ASSEMBLY	175 PSF	
EXTERIOR FLOOR ASSEMBLY	175 PSF	
 - WIND LOAD

BASIC WIND SPEED	115 MPH	
IMPORTANCE FACTOR	III	
EXPOSURE	C	
 - SNOW LOAD 15 PSF
 - SEISMIC LOAD*

IRC DESIGN CATEGORY	D2	*FOR TEMPORARY PAD FOOTINGS AT TEMPORARY SITE LOCATION IN IRVINE, CA. NOTIFY ENGINEER OF ANY CHANGE TO SITE LOCATION.
---------------------	----	---
 - ROOF LIVE LOAD* 20 PSF *SERVICE LOAD

STEEL:

- STEEL MUST BE MINIMUM GRADE A36 WITH YIELD STRESS OF 36 KSI.
- ALL STEEL AND METAL CONNECTORS SUCH AS JOISTS/BEAM HANGERS, POST BASES, POST CAPS, AND TIE-DOWNS SHALL BE GALVANIZED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS IN ALL LOCATIONS UNLESS NOTED OTHERWISE.

WOOD:

- ALL FRAMING LUMBER AND DETAILS OF WOOD CONSTRUCTION SHALL CONFORM TO THE "NATIONAL DESIGN SPECIFICATION FOR STRESS GRADE LUMBER AND ITS FASTENINGS" (INCLUDING SUPPLEMENTS).
- ALL ENGINEERED WOOD PRODUCTS ARE TO BE PROVIDED BY NORDIC ENGINEERED WOOD AND ARE TO MEET ALL SPECIFICATIONS OF "NORDIC ENGINEERED WOOD RESIDENTIAL CONSTRUCTION GUIDE" OR APPROVED EQUAL.
- GLUED LAMINATED LUMBER (GLULAM) SHALL BE GRADE 24F-1.9E LVL MIN. PER NORDIC ENGINEERED WOOD OR APPROVED EQUAL.

BENDING FB	2,400 PSI
COMPRESSIVE STRESS FC	460 PSI
MODULUS OF ELASTICITY E	1,800,000 PSI
- REFER TO "NORDIC RESIDENTIAL CONSTRUCTION GUIDE" FOR ALL INFORMATION INCLUDING, BUT NOT LIMITED TO:
 - PENETRATION ALLOWANCES IN WOOD MEMBERS
 - BEARING REQUIREMENTS OF JOISTS
 - CONNECTION / BLOCKING DETAILS
- TYPICAL LUMBER SHALL BE OF THE FOLLOWING MINIMUM GRADE (UNLESS OTHERWISE NOTED) AND SHALL BE GRADE STAMPED BY A RECOGNIZED GRADING AGENCY, SHALL BE SURFACED DRY, AND SHALL BE USED AT A MAXIMUM OF 19% MOISTURE CONTENT.

SPECIES	DOUGLAS FIR
GRADE	2
BENDING FB	900 PSI
COMPRESSIVE STRESS FC	1,350 PSI
MODULUS OF ELASTICITY E	1,600,000 PSI
- EXTERIOR RAMP AND DECK STRUCTURAL FRAMING SHALL BE OF OF THE FOLLOWING MINIMUM GRADE (UNLESS OTHERWISE NOTED) AND SHALL BE GRADE STAMPED BY A RECOGNIZED GRADING AGENCY, SHALL BE SURFACED DRY, AND SHALL BE USED AT A MAXIMUM OF 19% MOISTURE CONTENT.

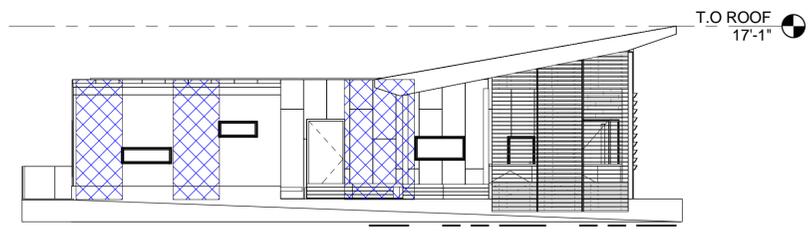
SPECIES	DOUGLAS FIR
GRADE	1
BENDING FB	1,100 PSI
COMPRESSIVE STRESS FC	1,550 PSI
MODULUS OF ELASTICITY E	1,800,000 PSI
- PLYWOOD SHEATHING SHALL BE APA GRADE STAMPED FOR THE SPECIFIC SPAN, AND SHALL BE MADE WITH EXTERIOR GLUE, AND SHALL BE OF THE FOLLOWING THICKNESS:

APA RATED STRUCTURAL SHEATHING	
EXPOSURE I	
- ALL PLYWOOD SHEATHING SHALL BE GLUED AND NAILED TO FLOOR JOISTS USING APA APPROVED ELASTOMERIC CONSTRUCTION ADHESIVE AND REQUIRED NAILING.
- DETAILS OF WOOD FRAMING SUCH AS NAILING, BLOCKING, BRIDGING, ETC. SHALL CONFORM TO THE 2012 INTERNATIONAL BUILDING CODE OR THE "NORDIC RESIDENTIAL CONSTRUCTION GUIDE" UNLESS GREATER REQUIREMENTS ARE SHOWN IN DETAILS.
- WHERE BEAMS ARE FLUSH FRAMED TO HEADER, USE APPROVED TYPE BEAM HANGER.
- NO BEAMS, EXCEPT AS SHOWN IN DETAILS, SHALL BE CUT OR NOTCHED WITHOUT APPROVAL.

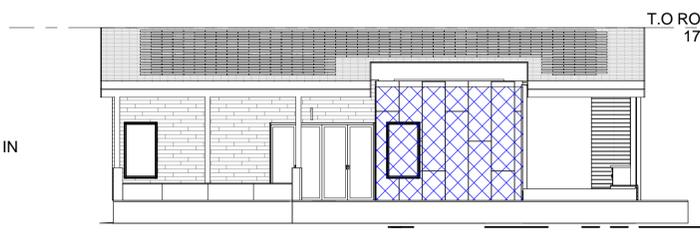
SHEAR WALL 



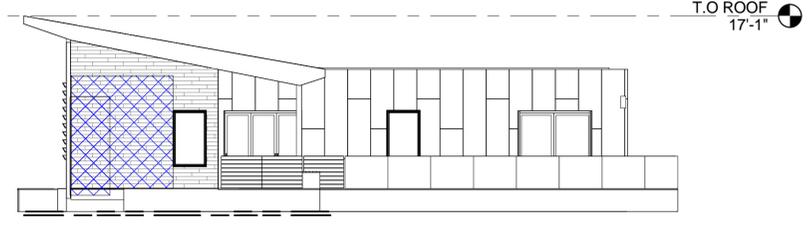
B4 NORTH ELEVATION SHEAR WALL
1/8" = 1'-0"



B6 EAST ELEVATION SHEAR WALL
1/8" = 1'-0"



A4 SOUTH ELEVATION SHEAR WALL
1/8" = 1'-0"



A6 WEST ELEVATION SHEAR WALL
1/8" = 1'-0"



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SHEET TITLE
STRUCTURAL NOTES
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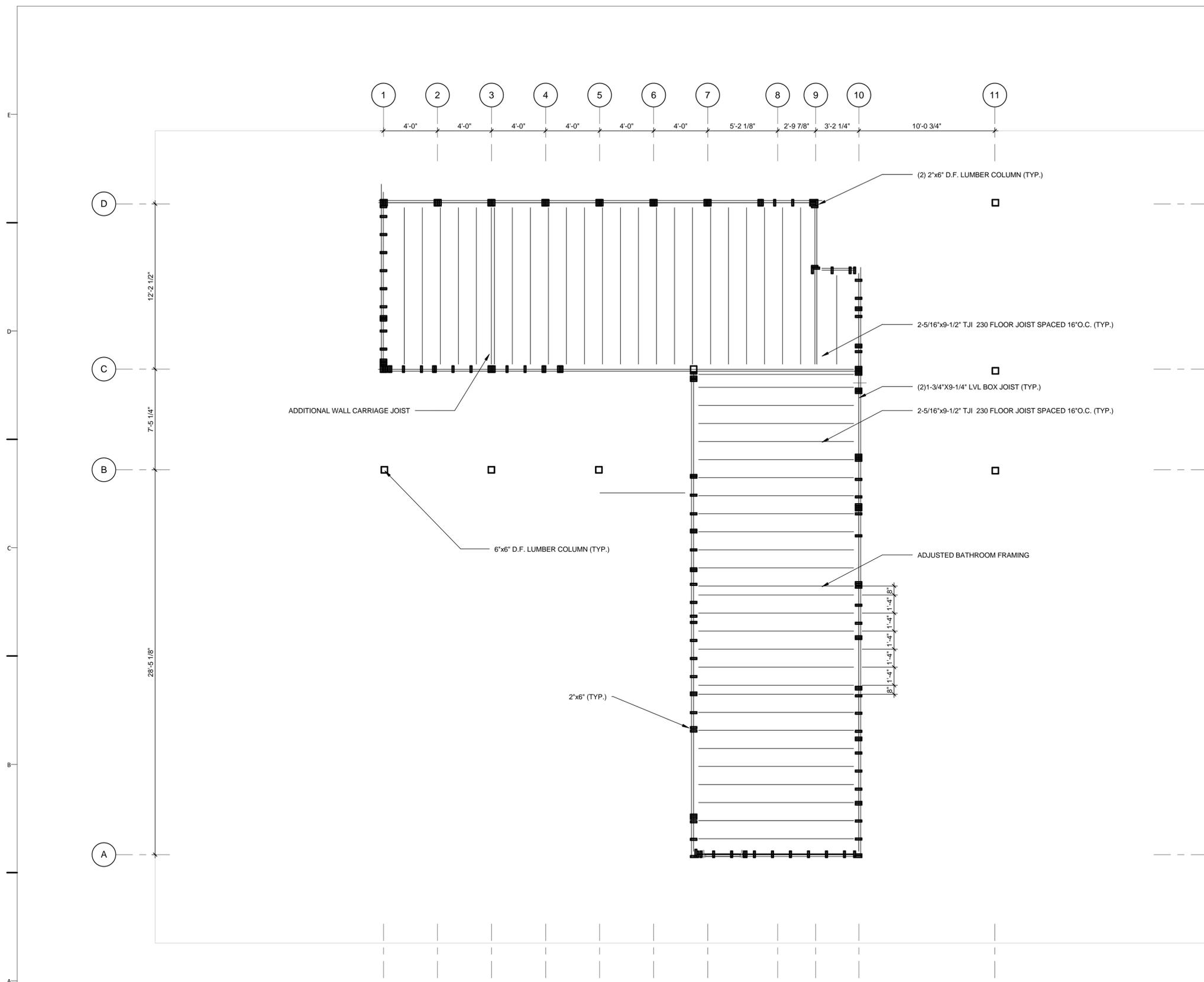
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SHEET TITLE
FIRST FLOOR FRAMING PLAN

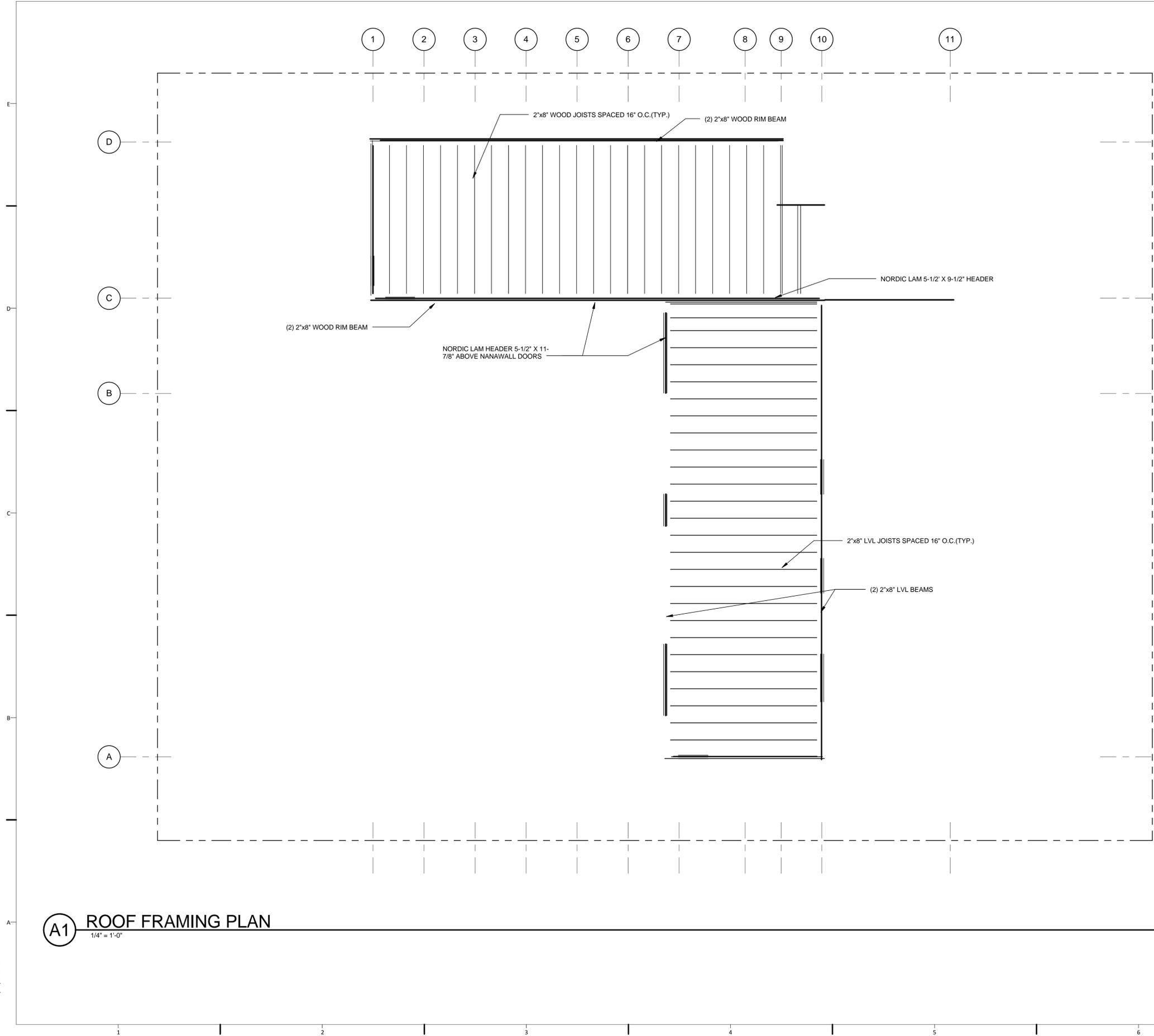
S-102



A1 FIRST FLOOR FRAMING PLAN
1/4" = 1'-0"



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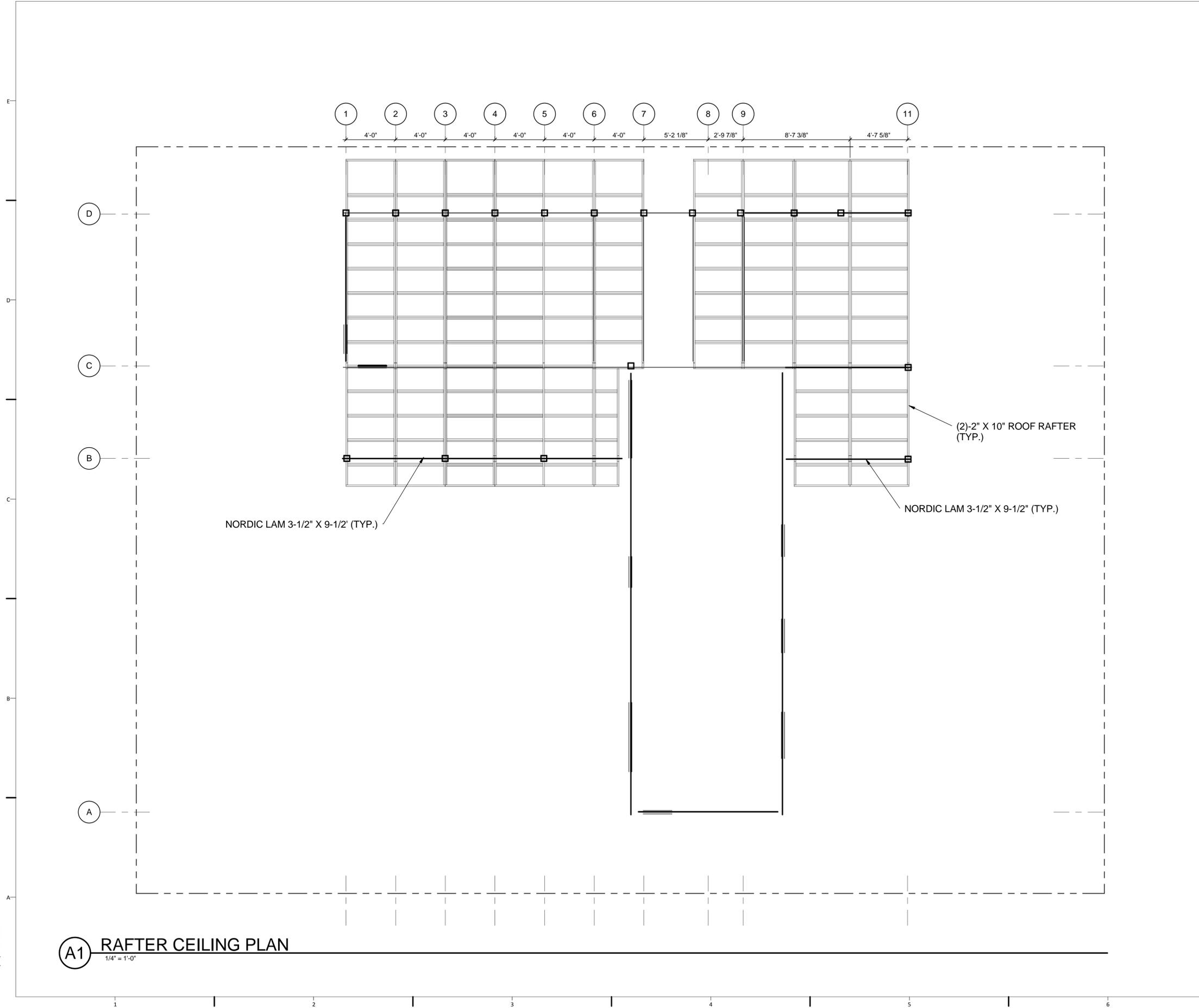
SHEET TITLE

ROOF FRAMING PLAN

S-103

A1 ROOF FRAMING PLAN
1/4" = 1'-0"

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SHEET TITLE
SOLAR ROOF FRAMING PLAN

S-104

A1 RAFTER CEILING PLAN
1/4" = 1'-0"

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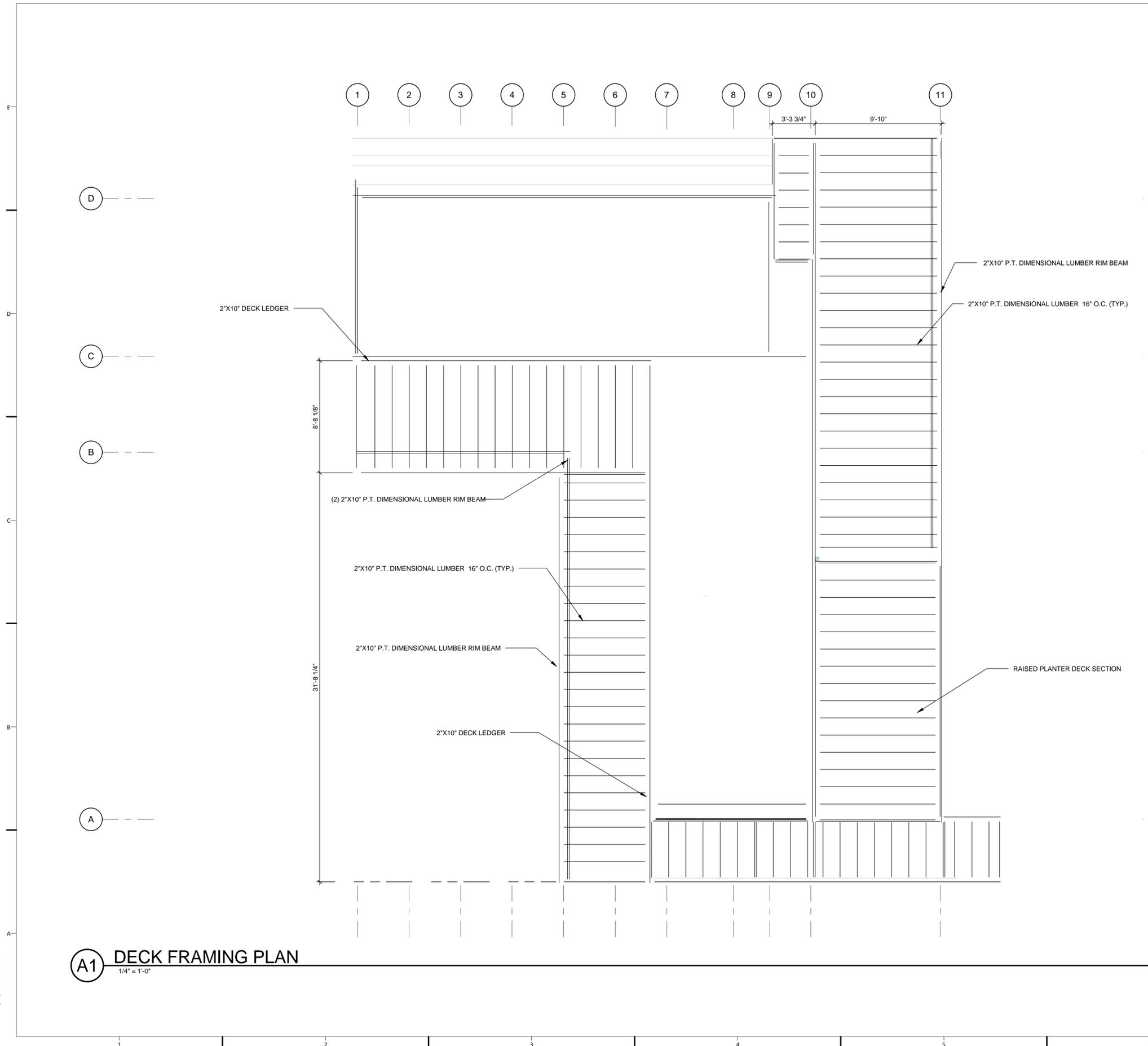
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SHEET TITLE
DECK FRAMING PLAN

S-105



A1 DECK FRAMING PLAN
1/4" = 1'-0"



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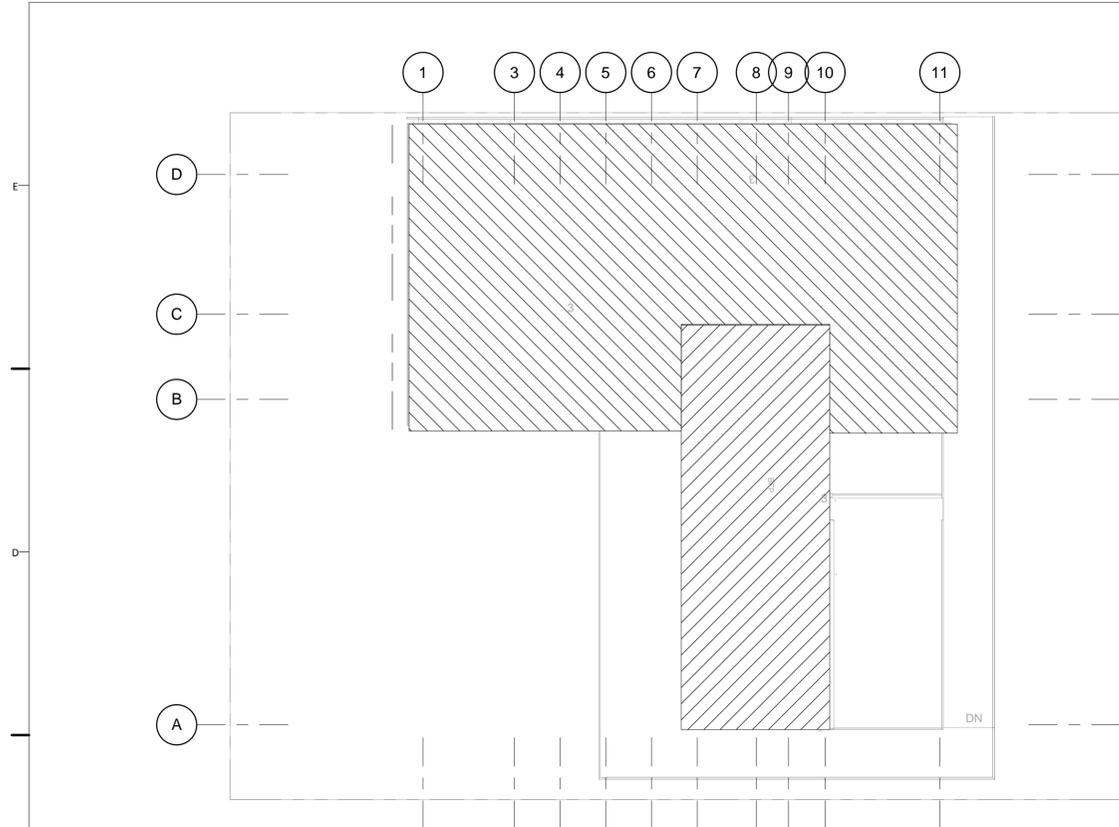
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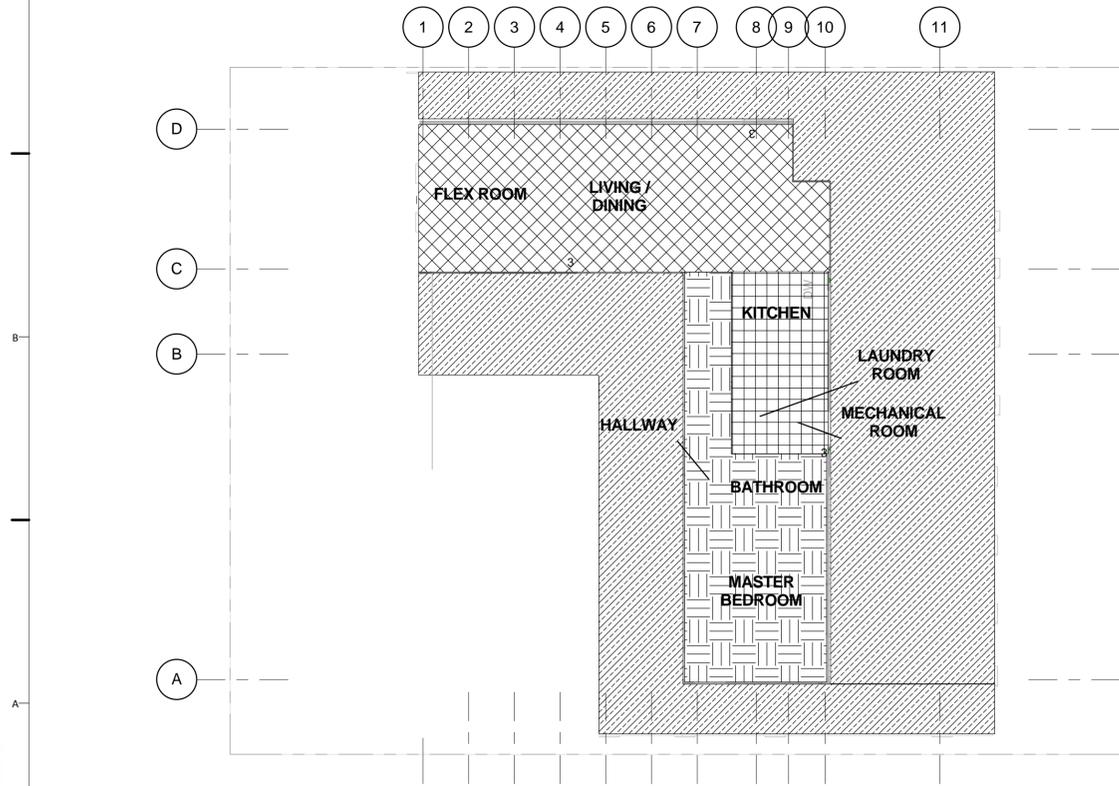
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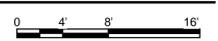
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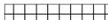


C1 ROOF LOAD DIAGRAM
1/8" = 1'-0"



A1 FIRST FLOOR LOAD DIAGRAM
1/8" = 1'-0"



	DRY MODULE ROOF LOAD	55	PSF
	WET MODULE ROOF LOAD	68	PSF
	DRY MODULE FLOOR LOAD	95	PSF
	WET MODULE FLOOR LOAD	95	PSF
	WET MODULE FLOOR LOAD PLUS MEP SYSTEMS	168	PSF
	EXTERIOR DECK LOAD	175	PSF

ALL LOADS ARE FACTORED BY ASCE 7-10 LRFD DESIGN STANDARDS

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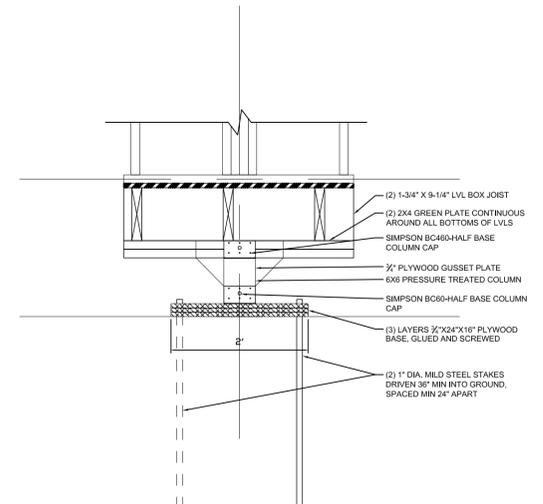
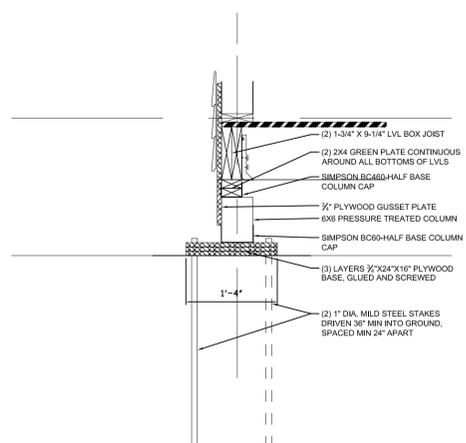
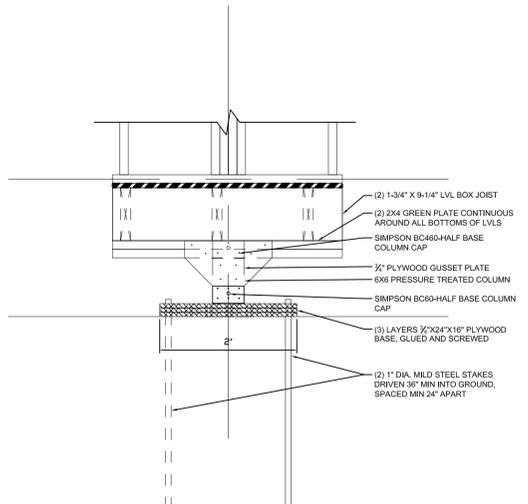
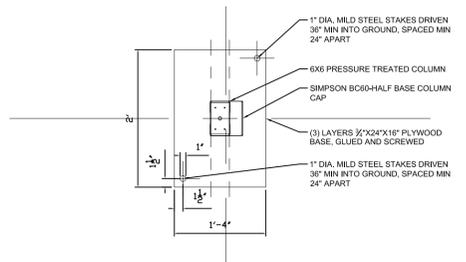
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FOUNDATION DETAILS



B1 TYPICAL HOUSE FOOTING
3\"/>

S-701



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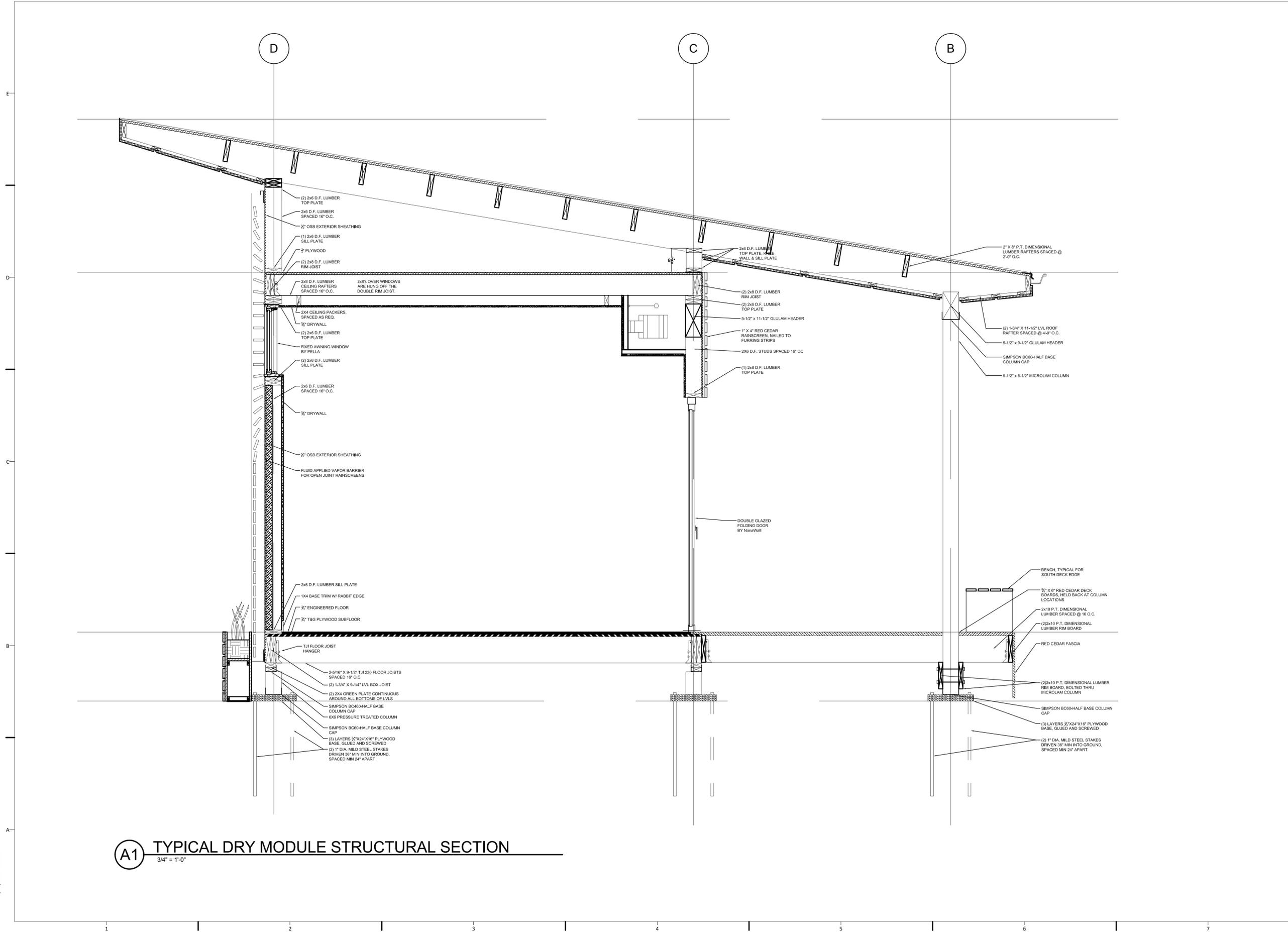
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DRY MOD SECTIONS

S-702



A1 TYPICAL DRY MODULE STRUCTURAL SECTION
3/4" = 1'-0"

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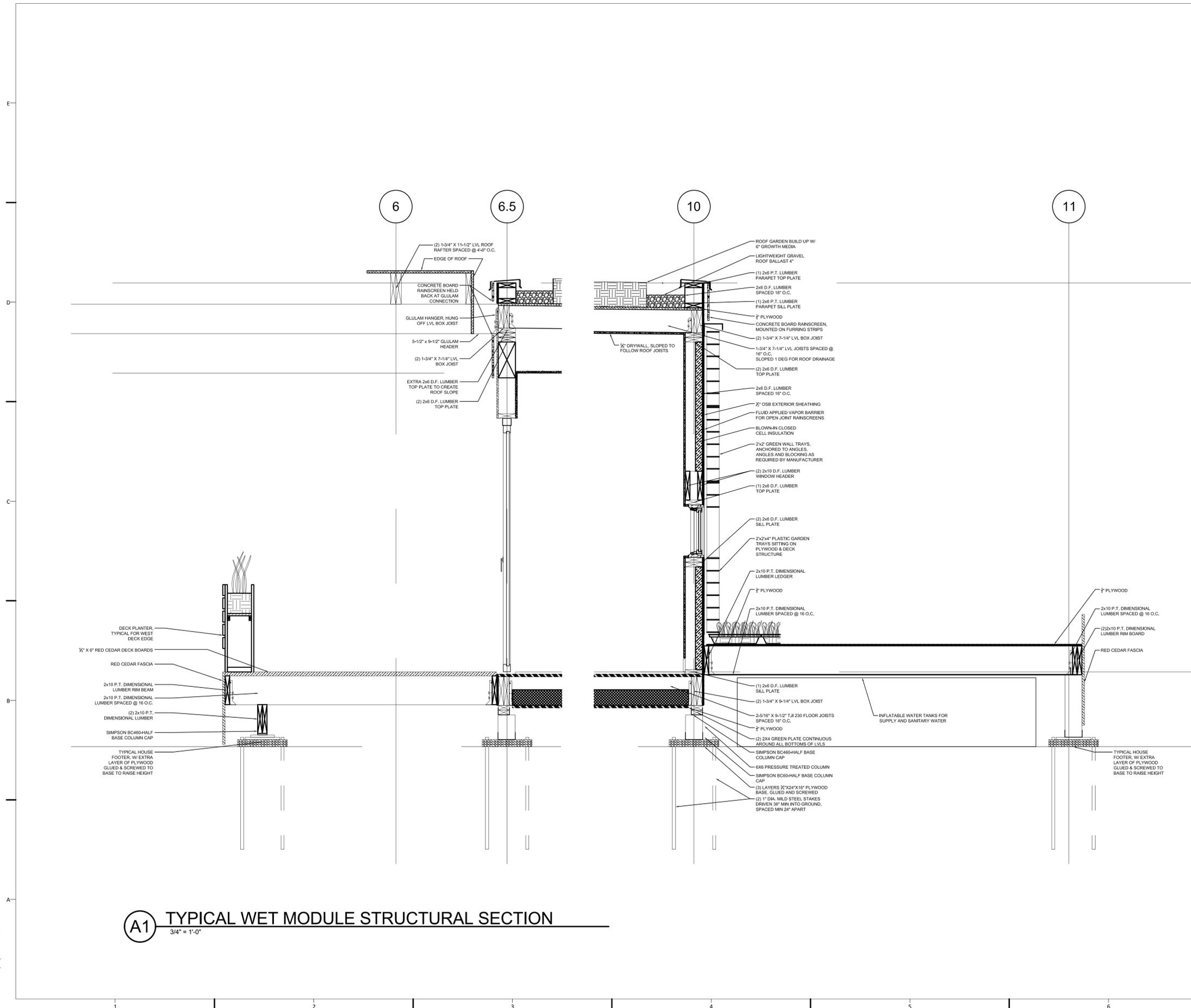
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WET MOD SECTIONS

S-703



A1 TYPICAL WET MODULE STRUCTURAL SECTION
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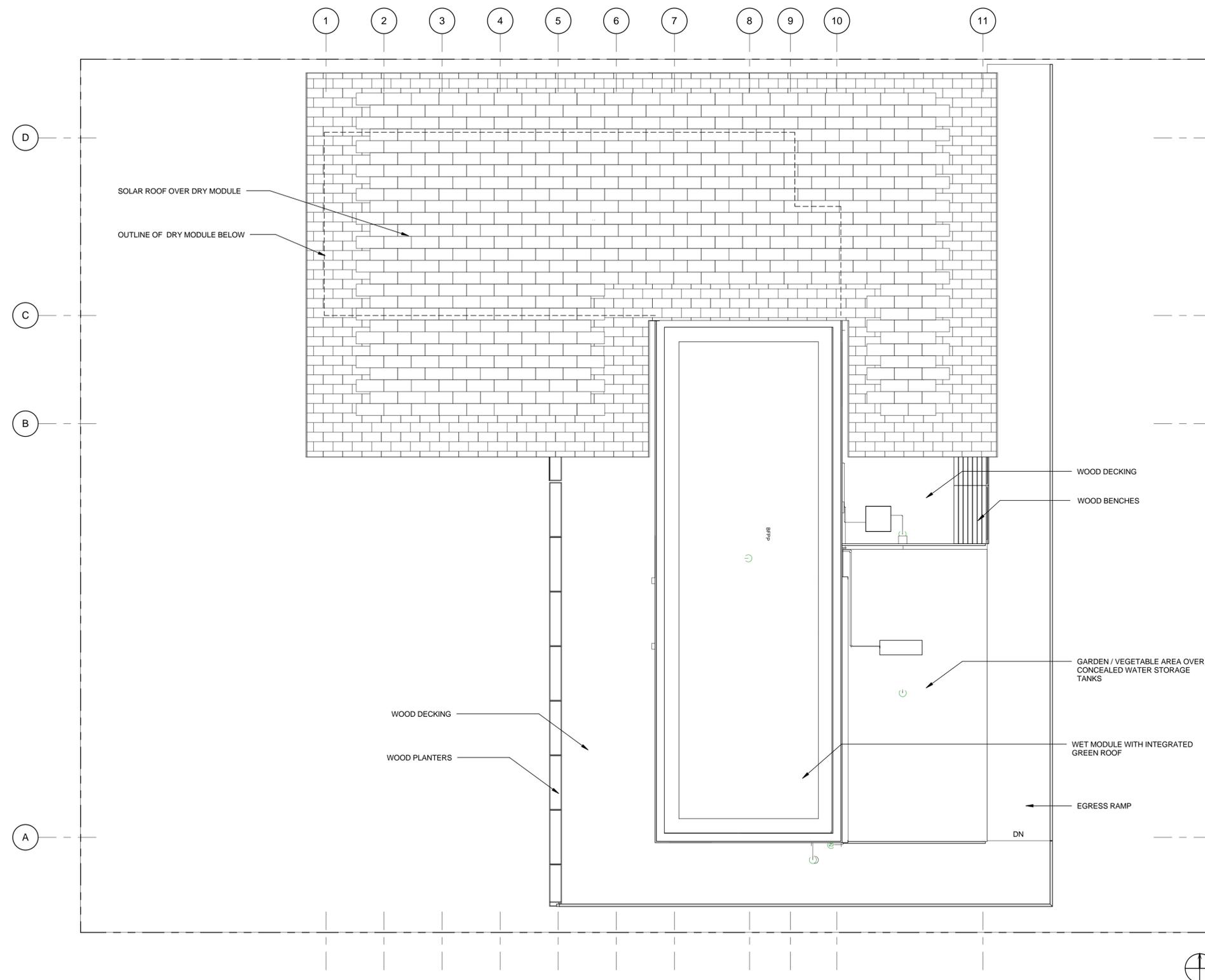


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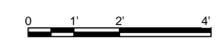
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SHEET TITLE
SITE PLAN

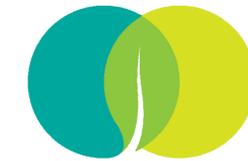
A-101



A1 SITE PLAN
1/4" = 1'-0"



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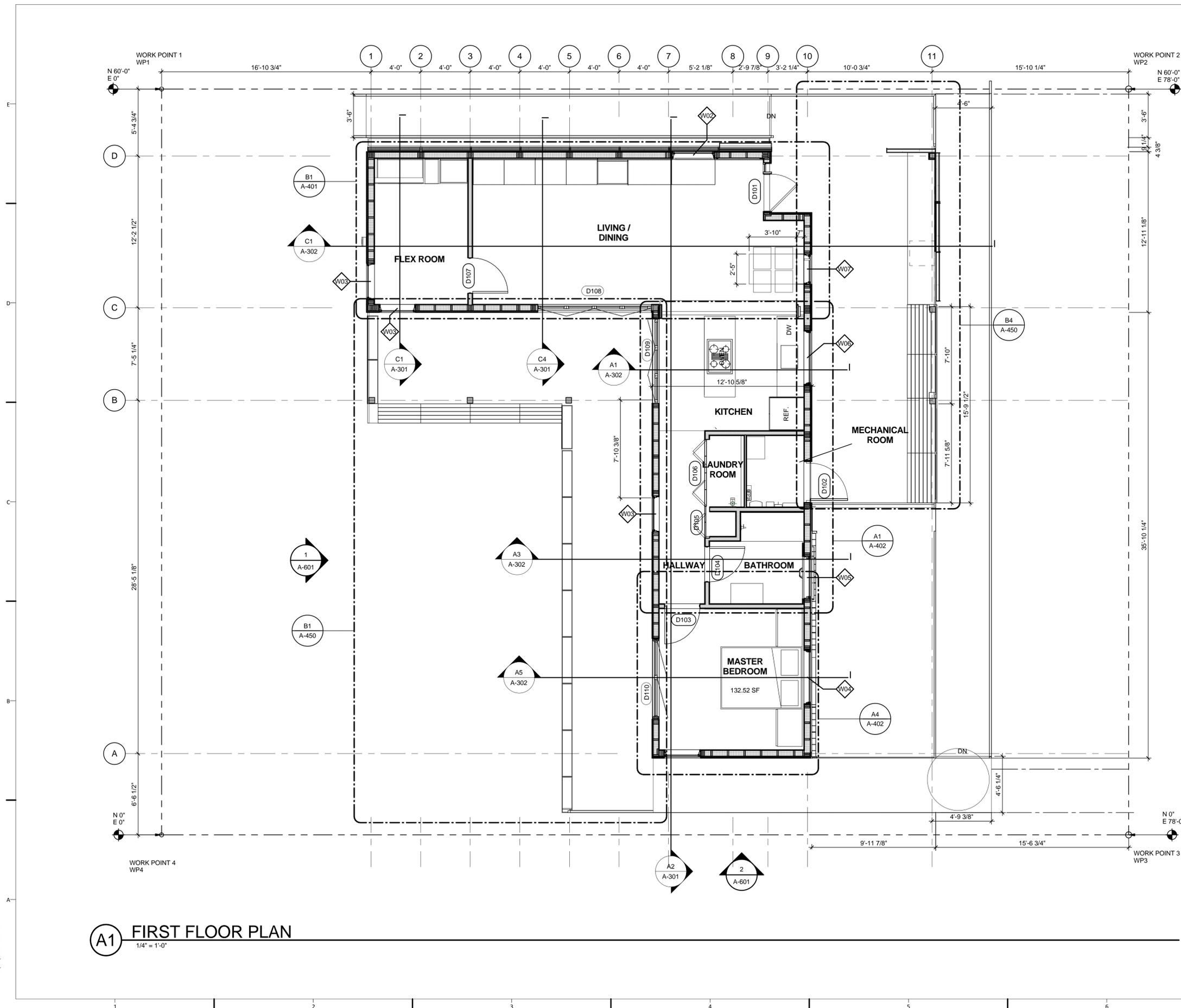
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SHEET TITLE
FIRST FLOOR PLAN

A-111



A1 FIRST FLOOR PLAN
1/4" = 1'-0"



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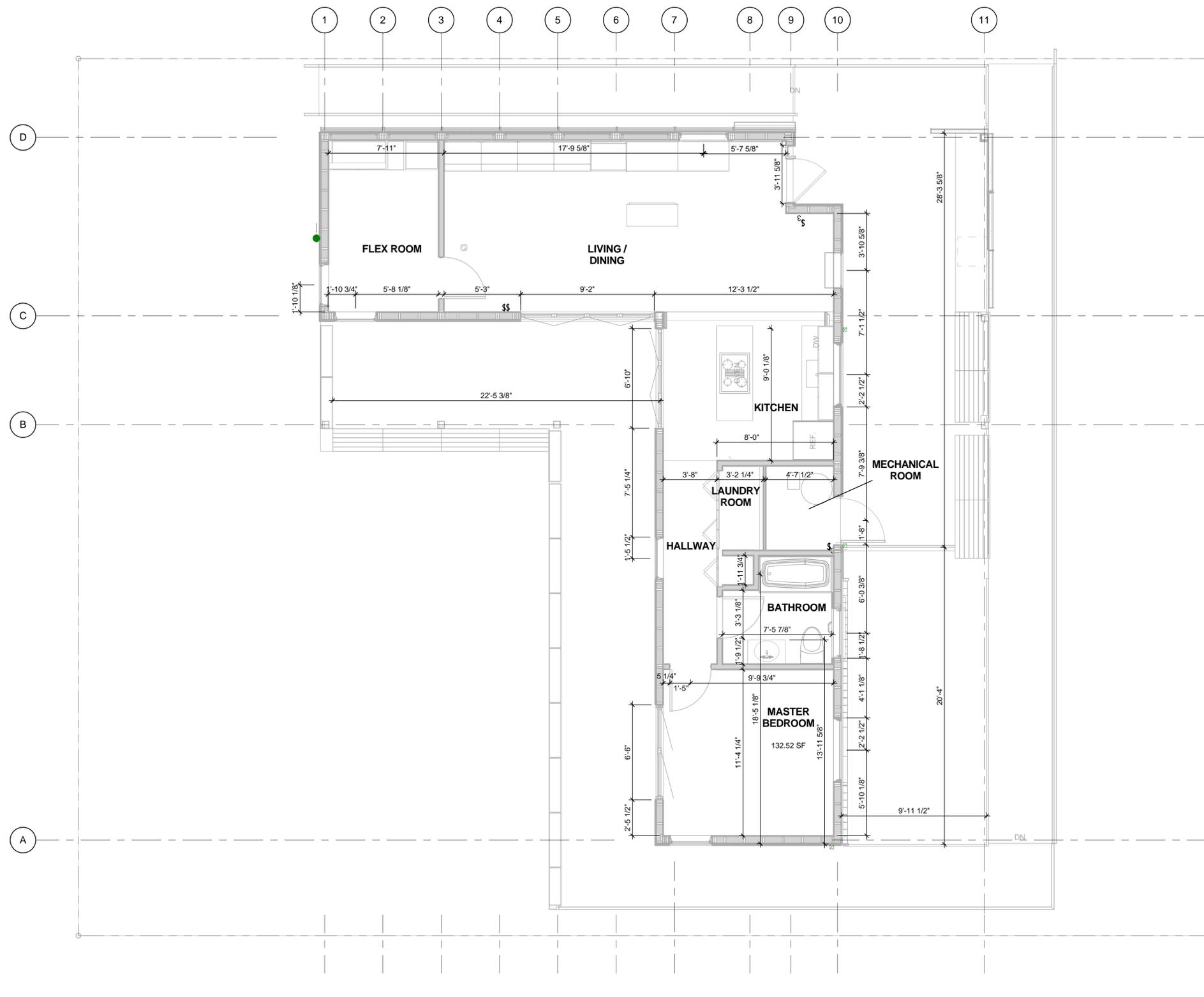


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SHEET TITLE
**FIRST FLOOR
DIMENSIONED PLAN**

A-112



A1 FIRST FLOOR DIMENSIONED PLAN
1/4" = 1'-0"

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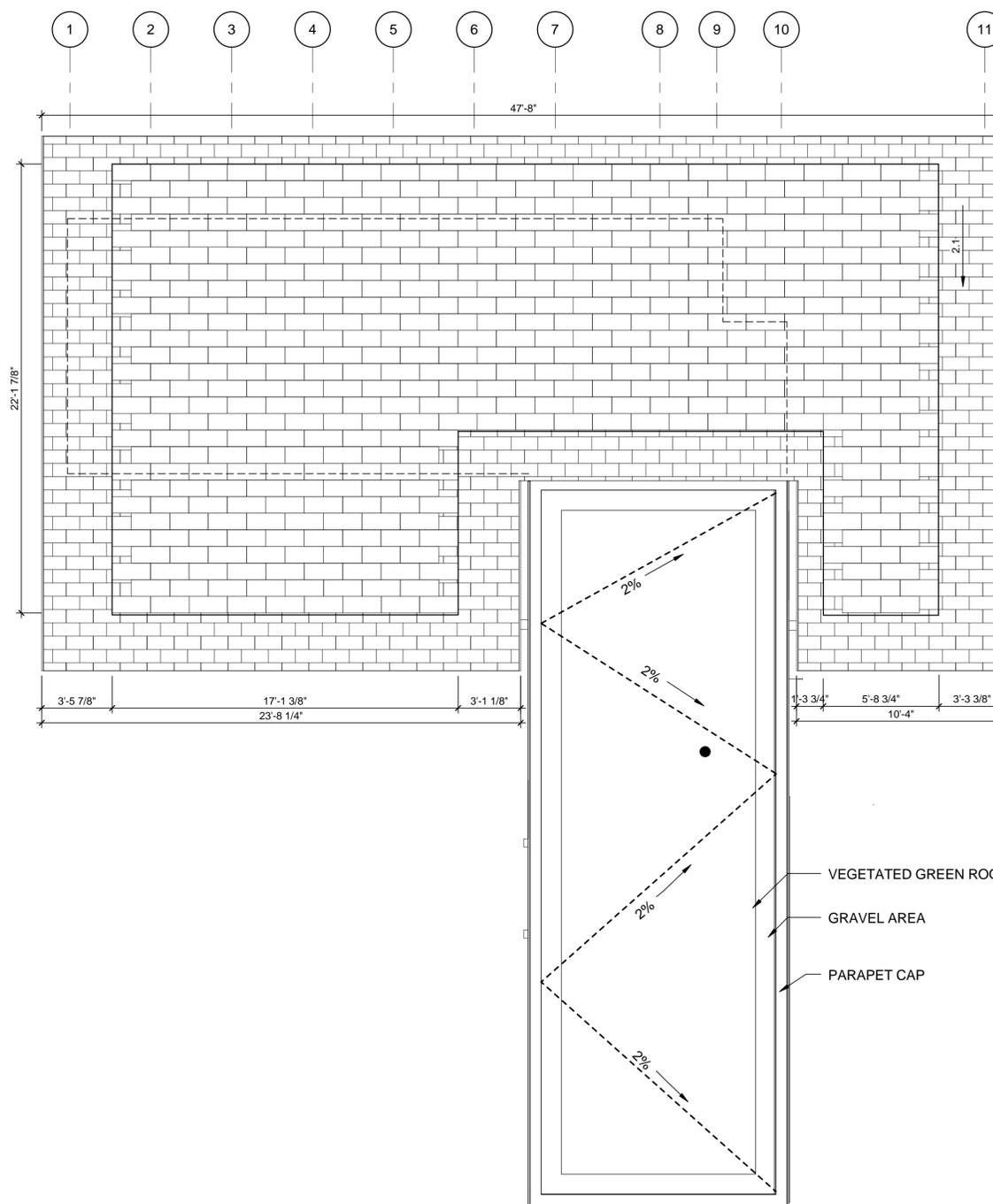


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SHEET TITLE
ROOF PLAN

A-113



D
C
B
A

A2 ROOF PLAN
1/4" = 1'-0"



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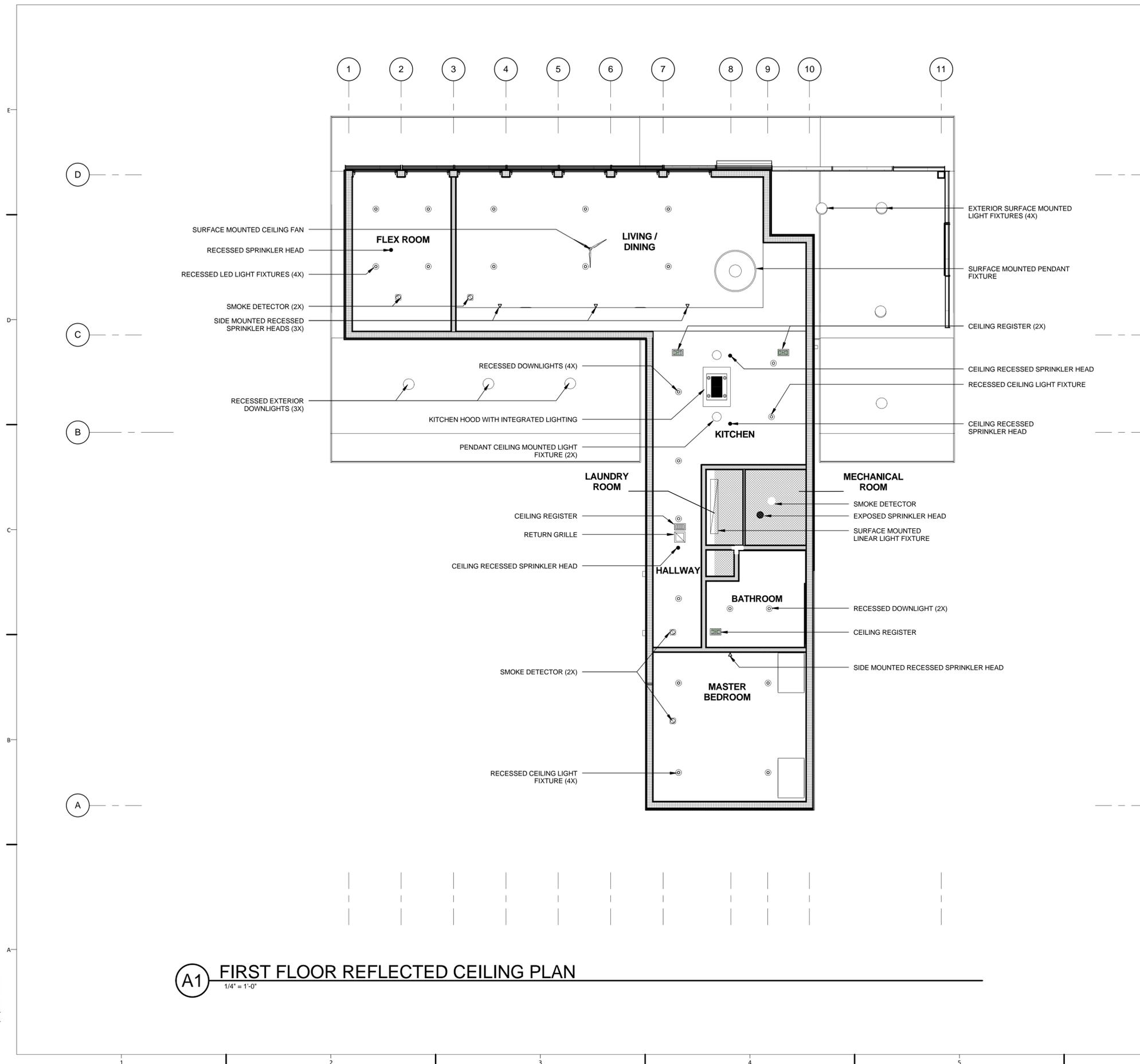


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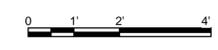
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SHEET TITLE
**FIRST FLOOR REFLECTED
CEILING PLAN**

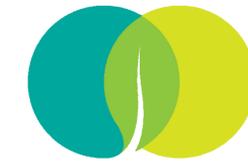
A-121



A1 FIRST FLOOR REFLECTED CEILING PLAN
1/4" = 1'-0"



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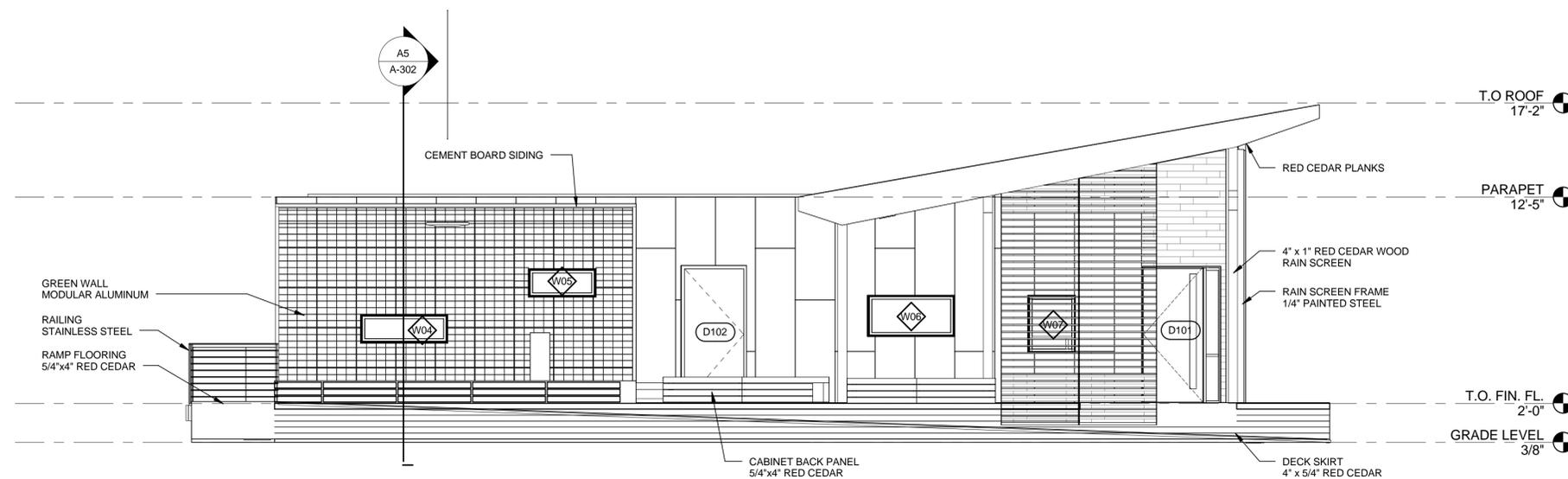


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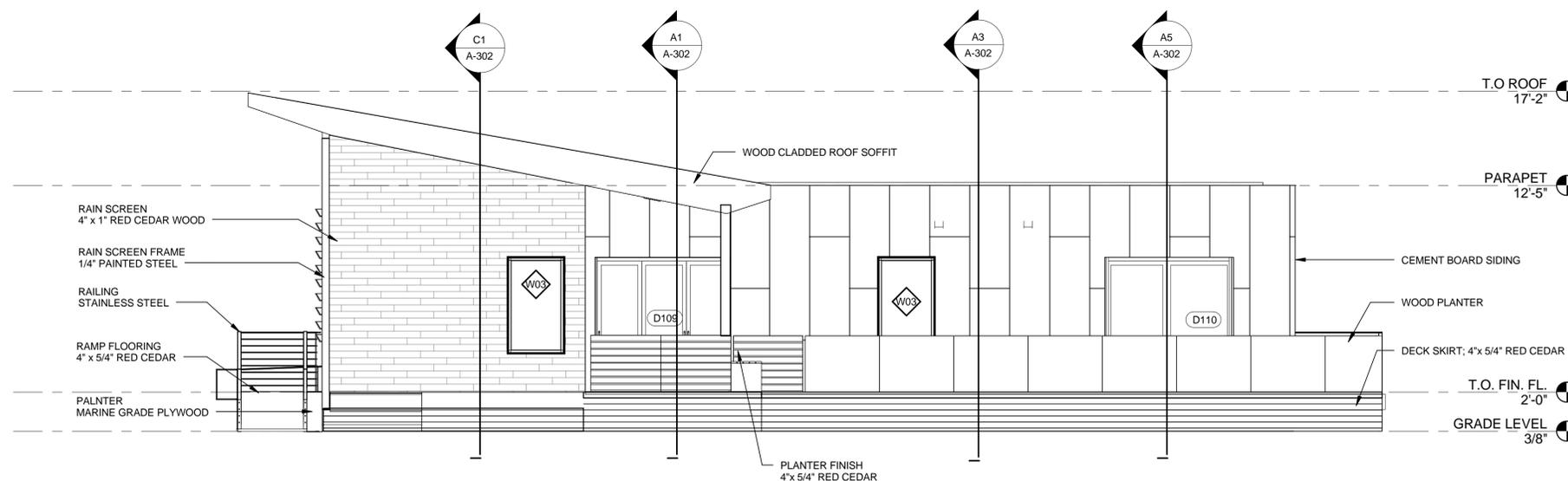
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ELEVATIONS

A-211



C2 EAST ELEVATION
1/4" = 1'-0"



A2 WEST ELEVATION
1/4" = 1'-0"





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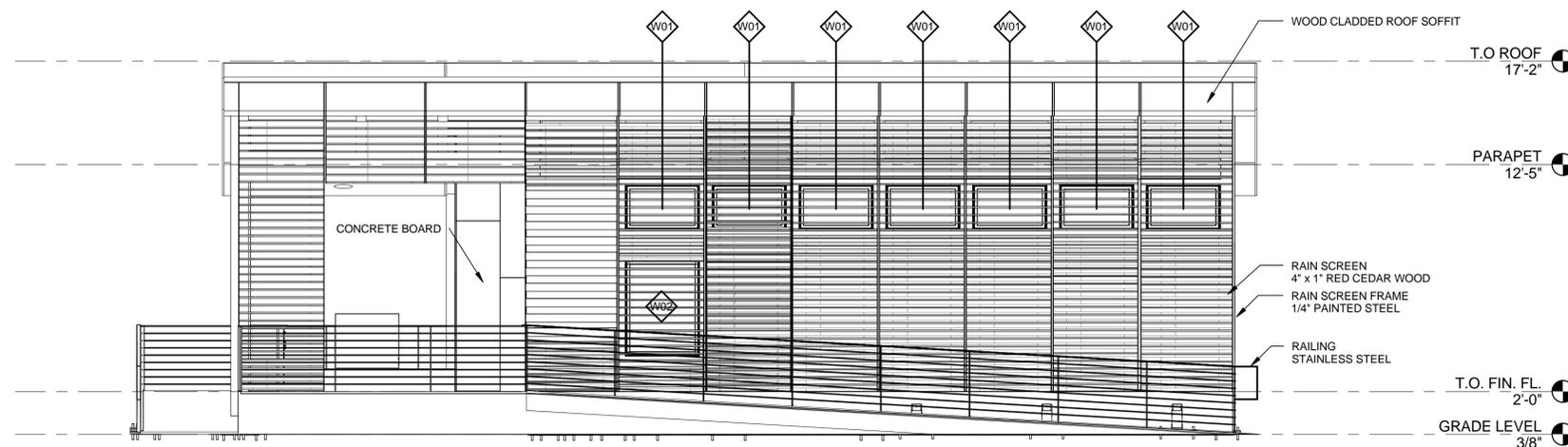
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ELEVATIONS

A-212



C2 NORTH ELEVATION
1/4" = 1'-0"



A2 SOUTH ELEVATION
1/4" = 1'-0"





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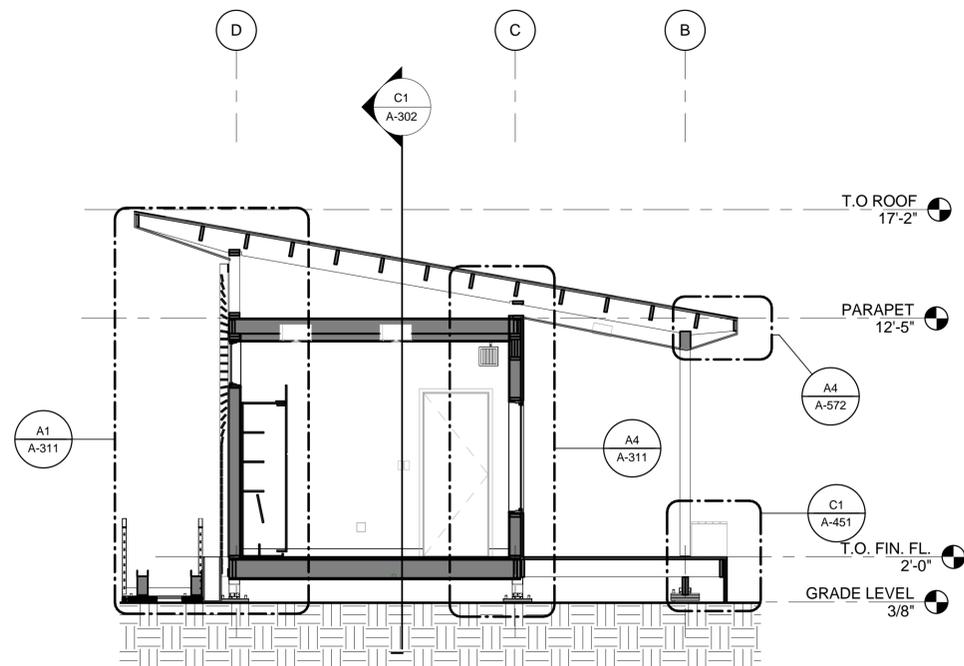


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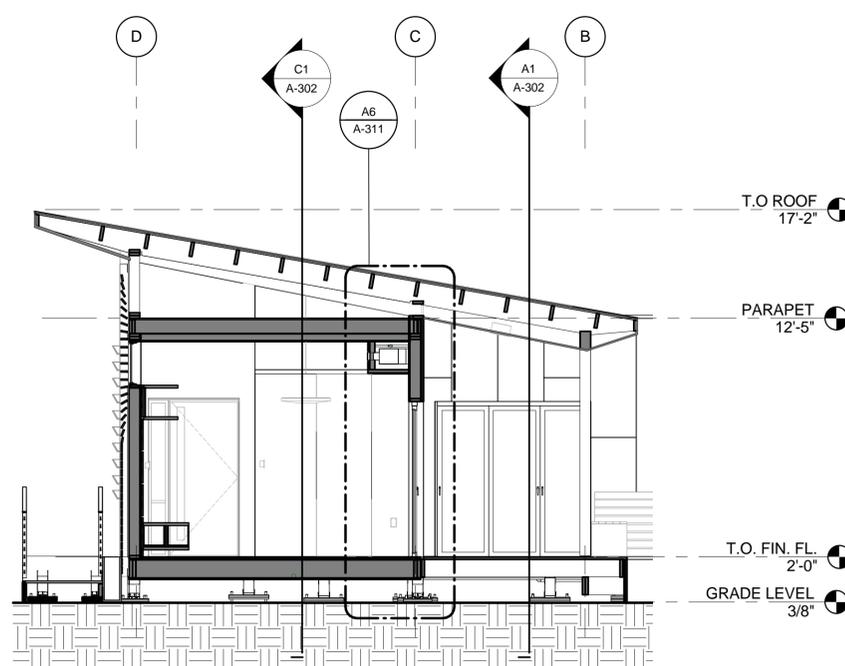
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**BUILDING SECTIONS
NORTH-SOUTH**

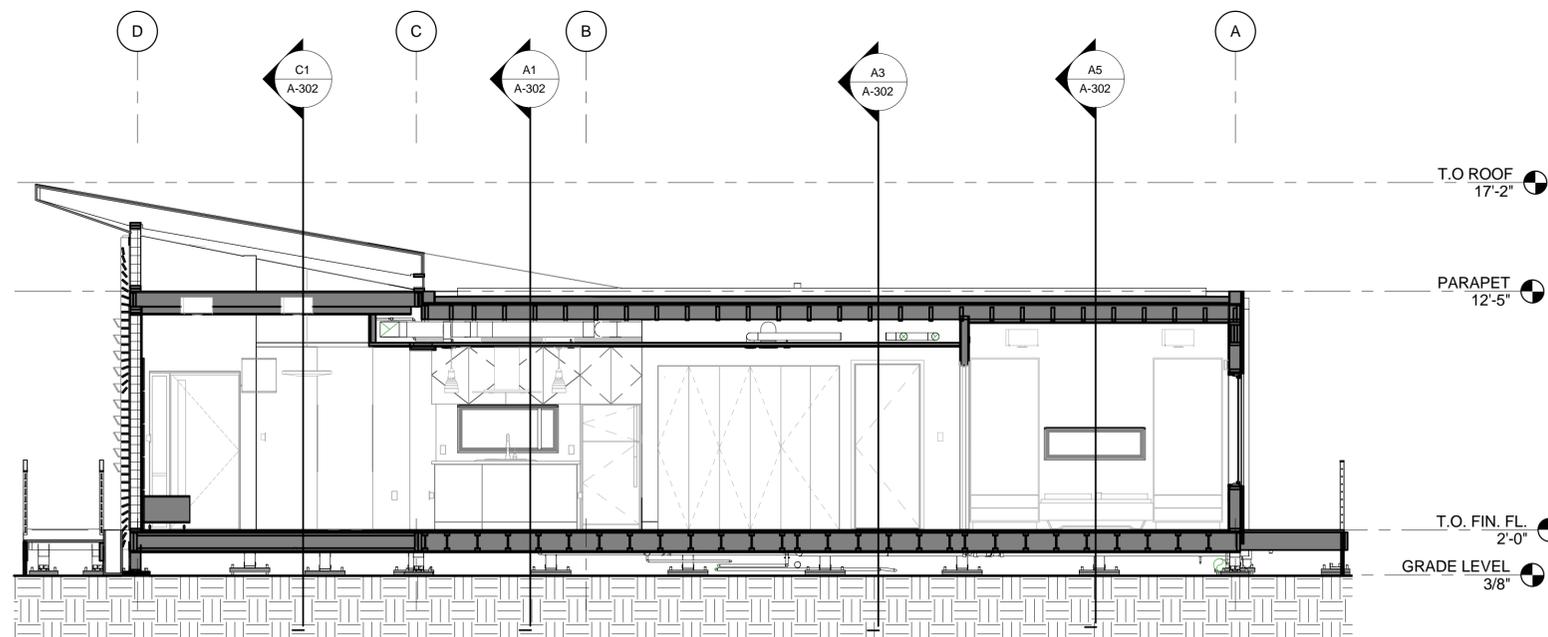
A-301



C1 DRY MODULE - FLEX ROOM
1/4" = 1'-0"



C4 DRY MODULE - LIVING ROOM
1/4" = 1'-0"



A2 BUILDING SECTION - NORTH-SOUTH
1/4" = 1'-0"





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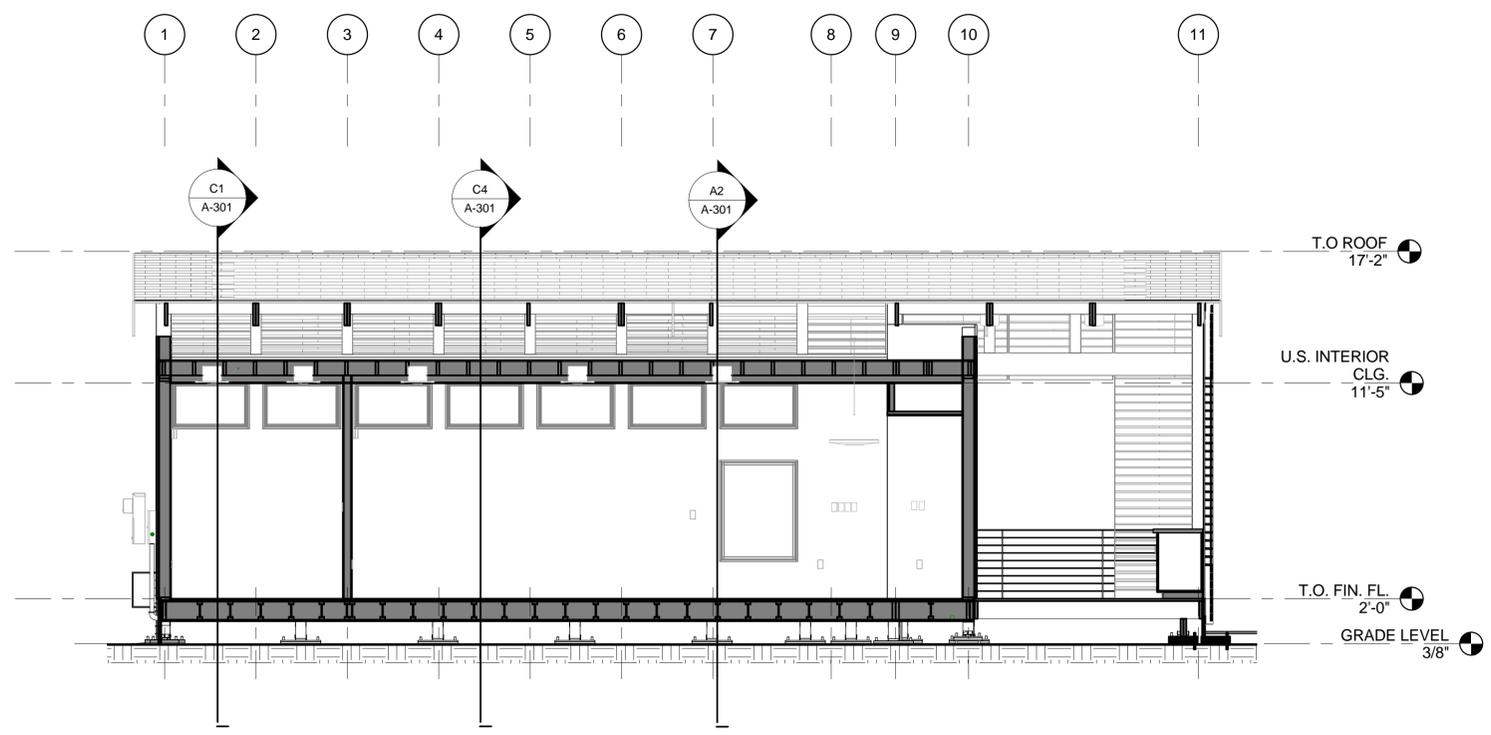
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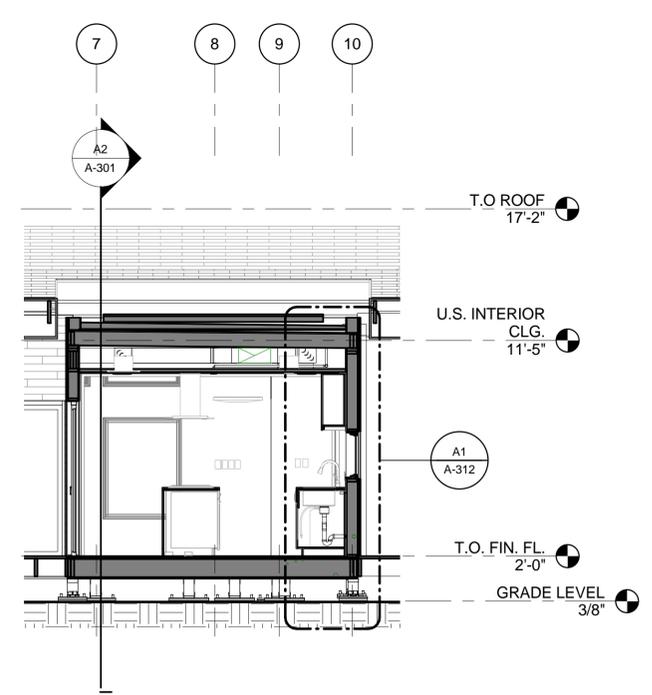
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**BUILDING SECTIONS
EAST-WEST**

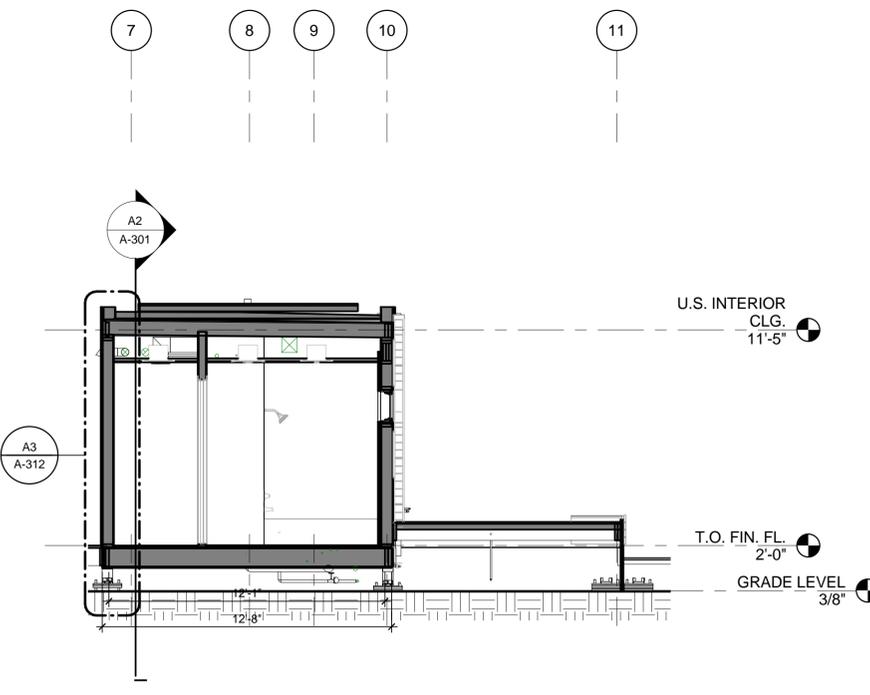
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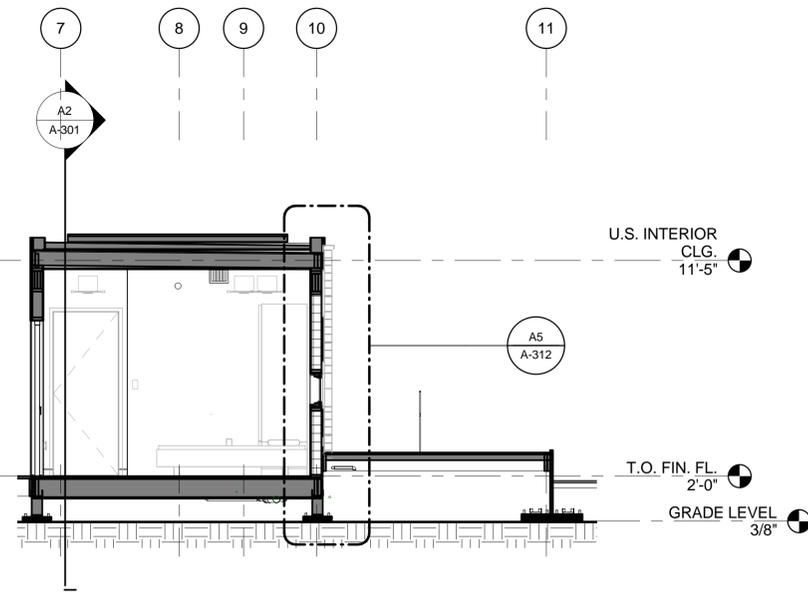
C1 DRY MODULE - EAST-WEST
1/4" = 1'-0"



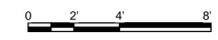
A1 WET MODULE - KITCHEN - EAST-WEST
1/4" = 1'-0"



A3 WET MODULE - BATH - EAST-WEST
1/4" = 1'-0"



A5 WET MODULE - BEDROOM
1/4" = 1'-0"



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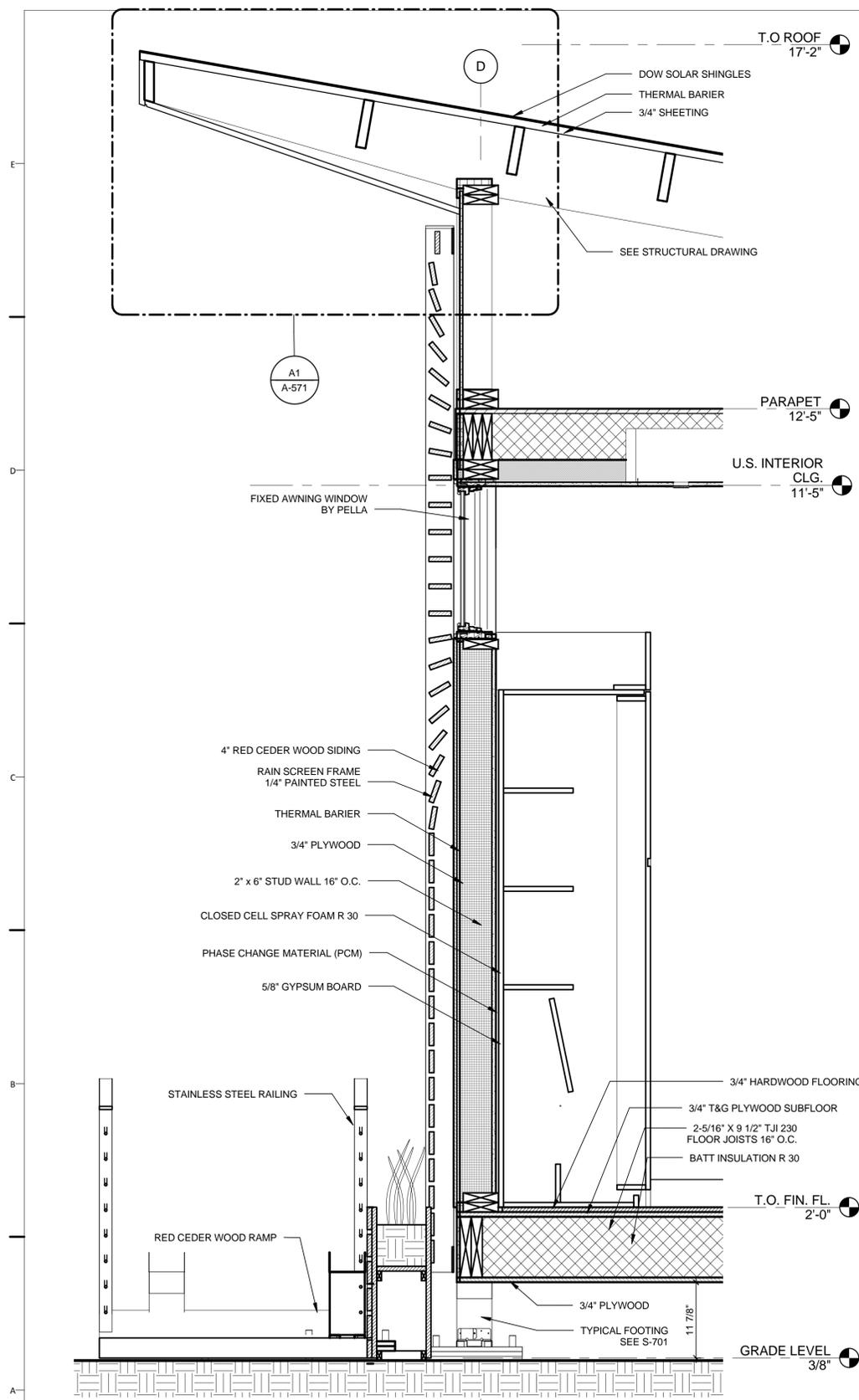


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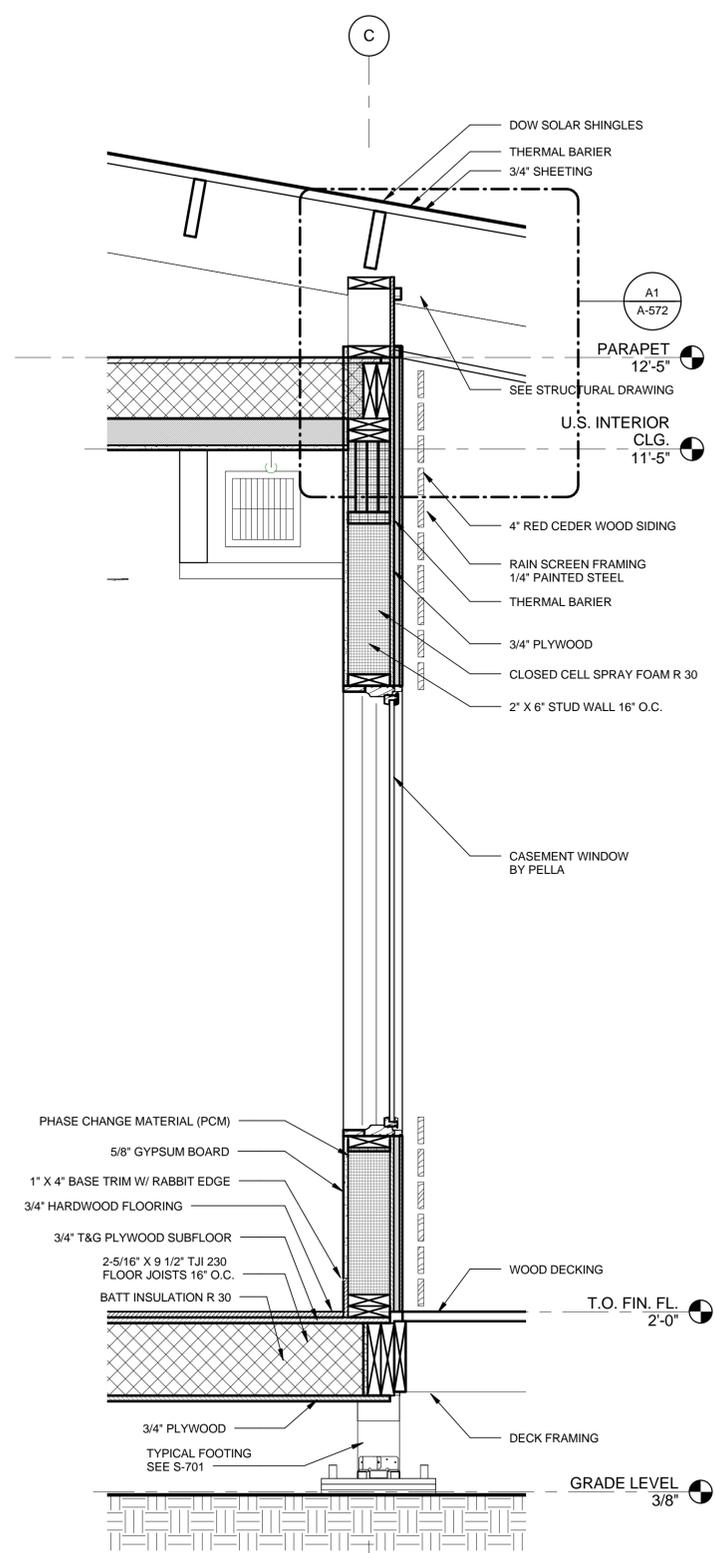
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WALL SECTIONS

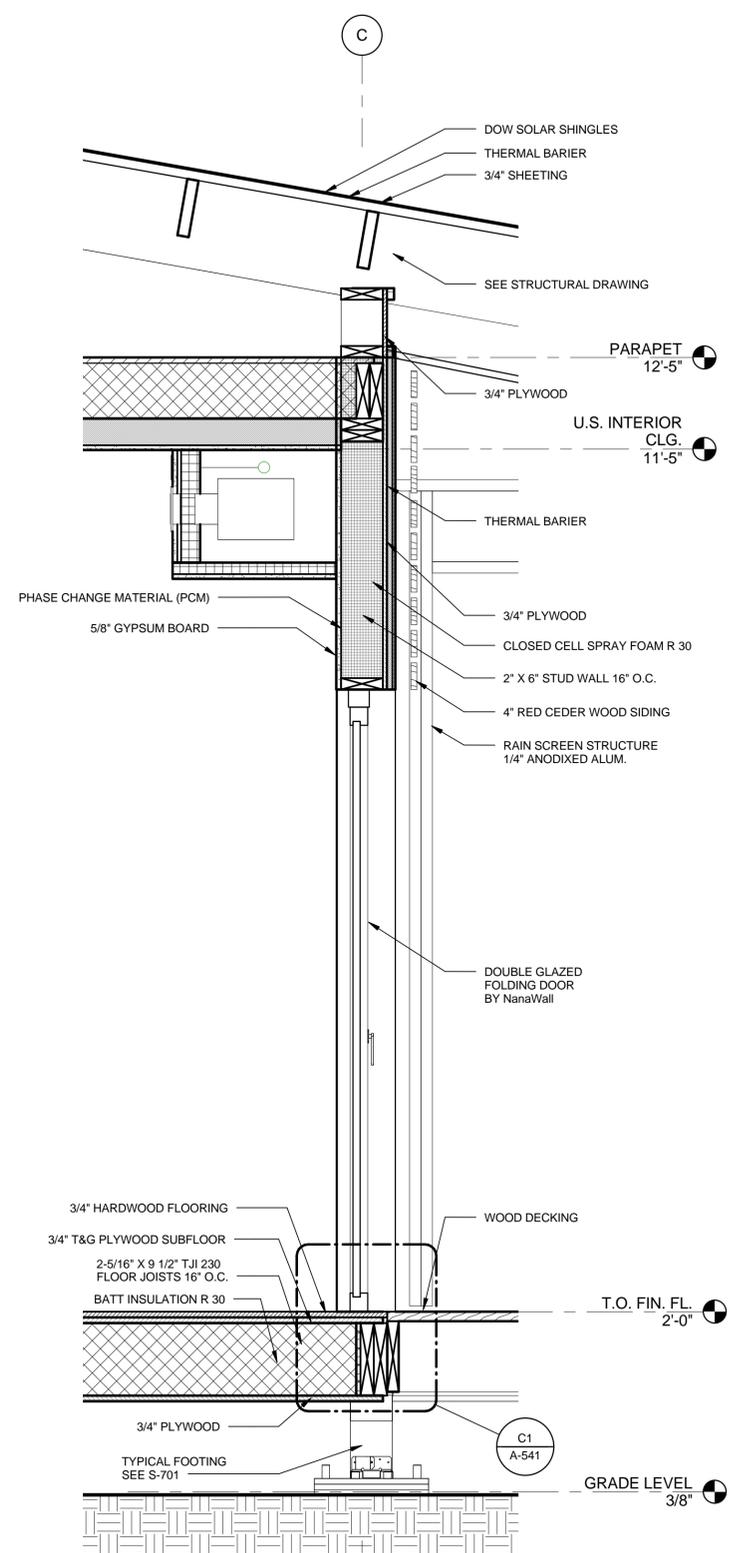
A-311



A1 NORTH WALL TYPICAL
1" = 1'-0"



A4 DRY MODULE SOUTH WALL TYPICAL
1" = 1'-0"



A6 FOLDING DOOR WALL
1" = 1'-0"



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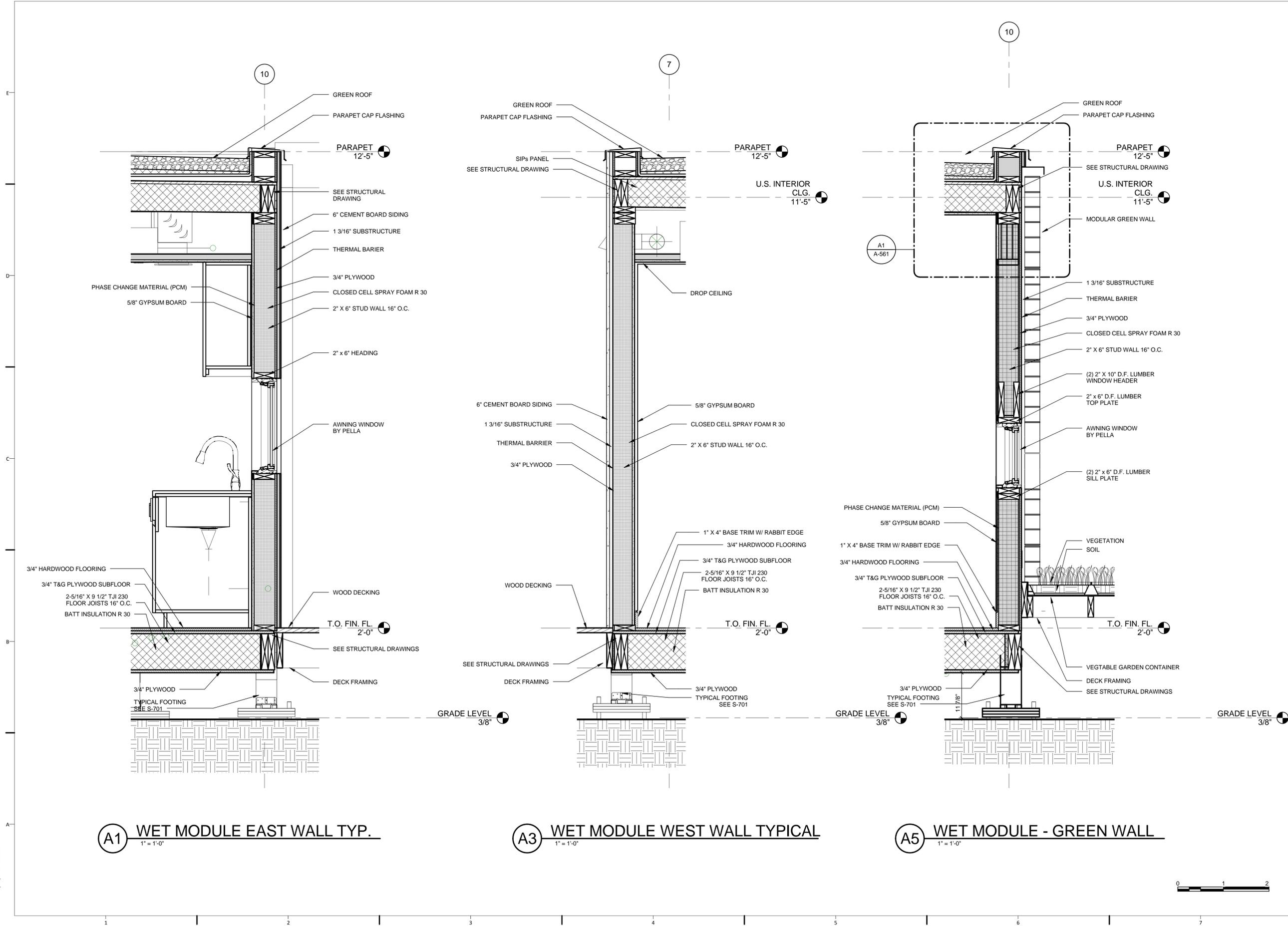


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WALL SECTIONS

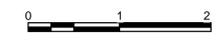
A-312



A1 WET MODULE EAST WALL TYP.
1" = 1'-0"

A3 WET MODULE WEST WALL TYPICAL
1" = 1'-0"

A5 WET MODULE - GREEN WALL
1" = 1'-0"



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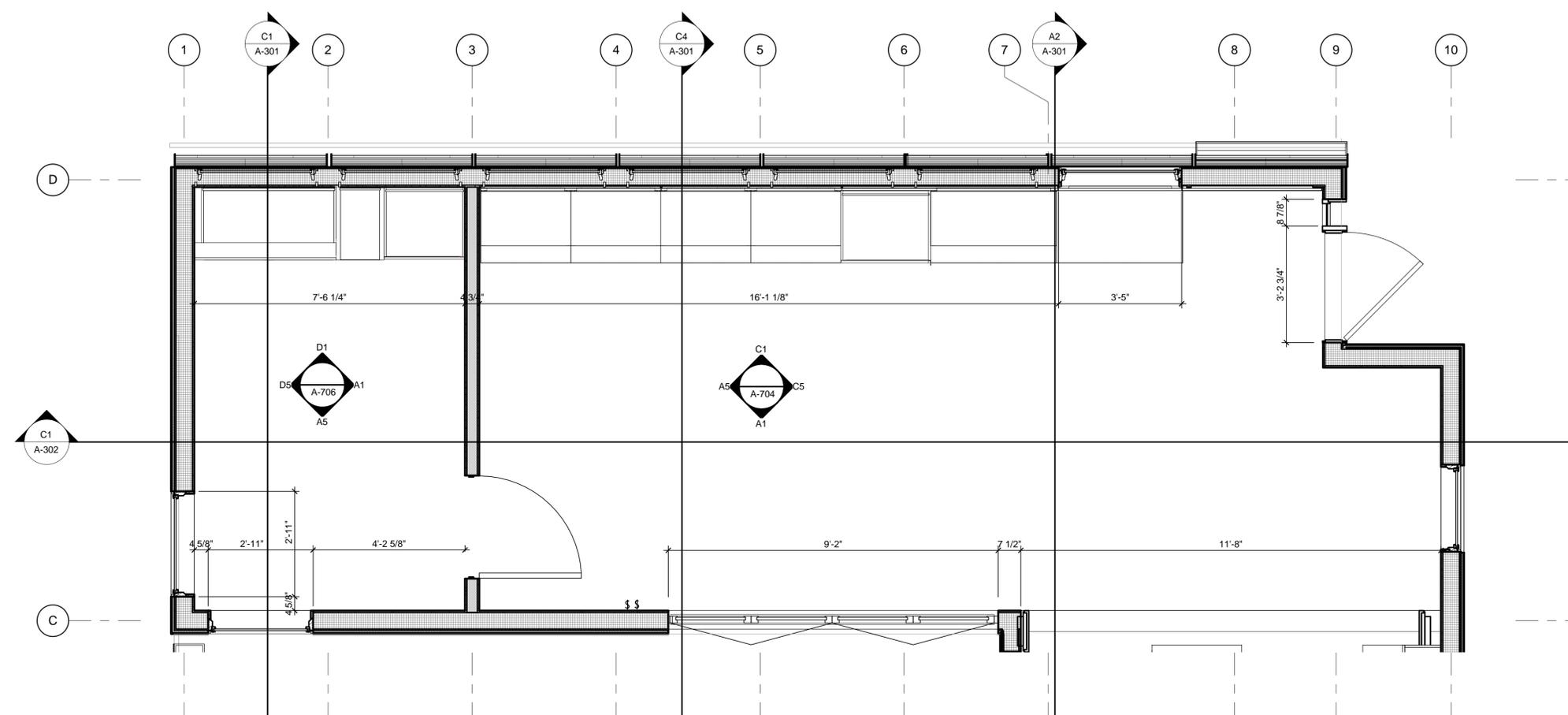
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**LARGE SCALE PLANS DRY
MODULE**



B1 DRY MODULE ENLARGED PLAN
1/2" = 1'-0"



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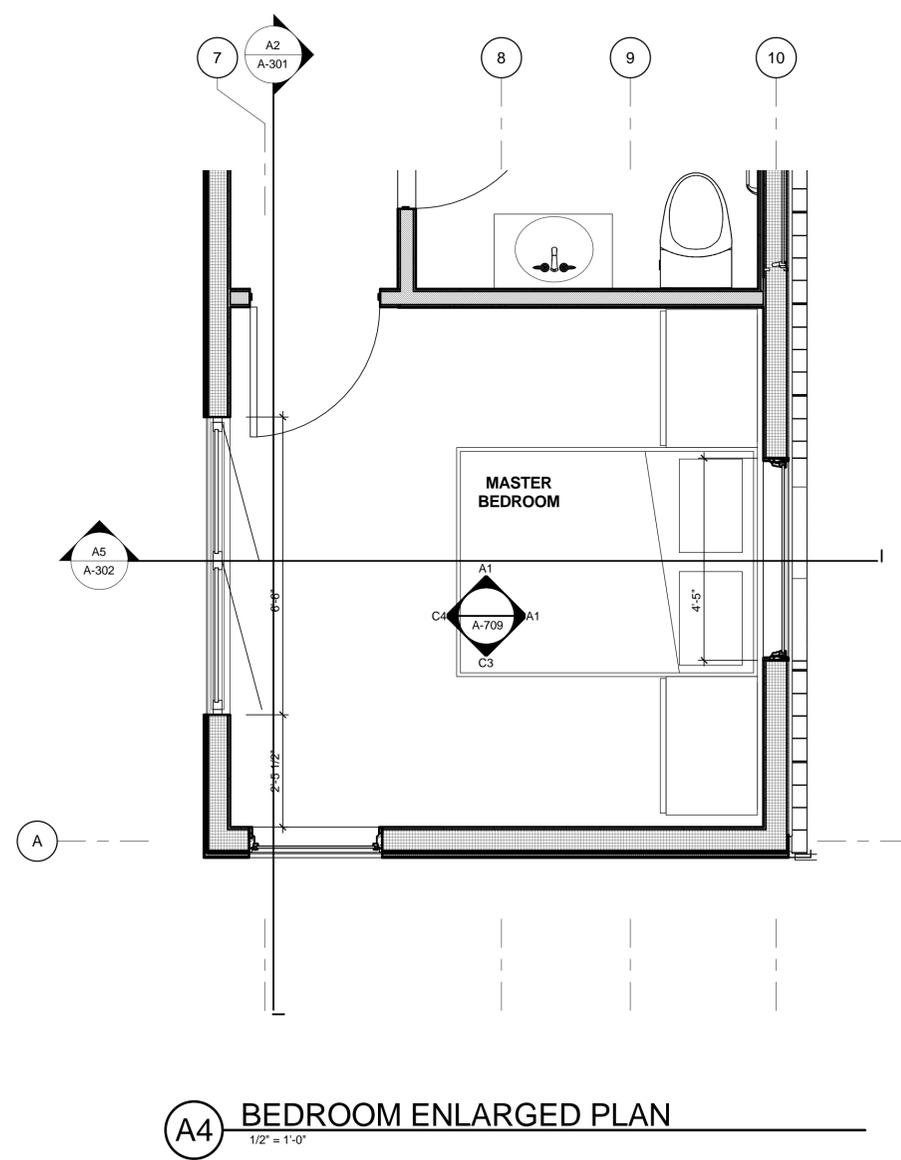
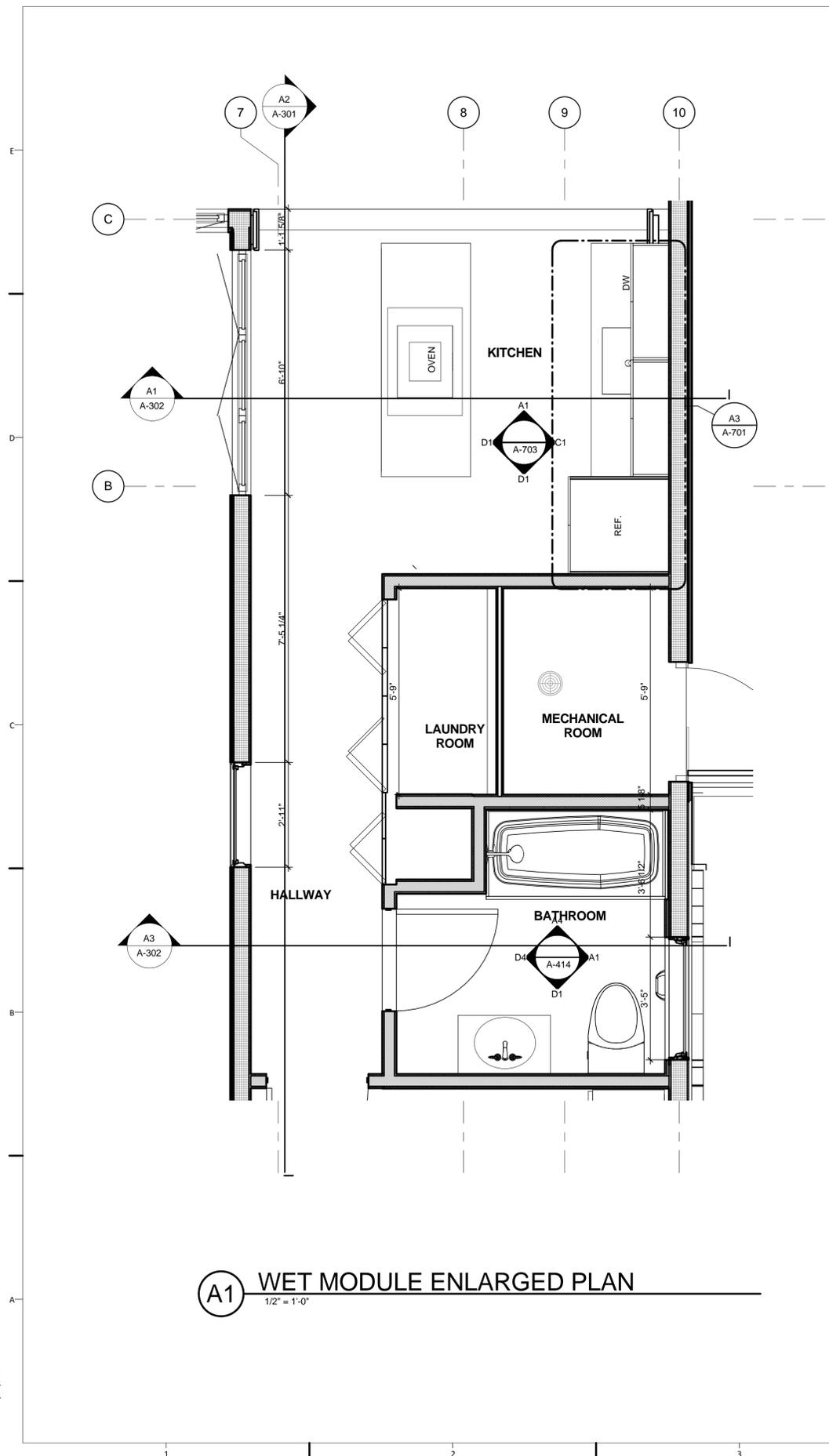
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**LARGE SCALE PLANS
WET MODULE**

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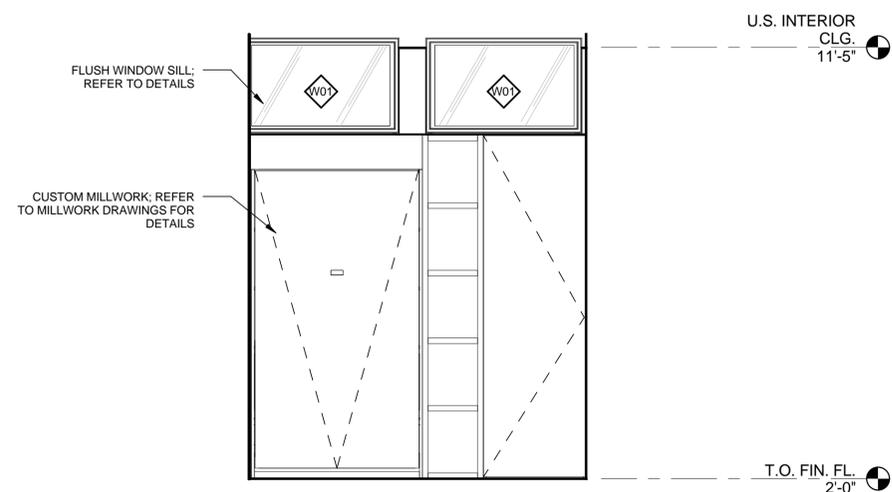


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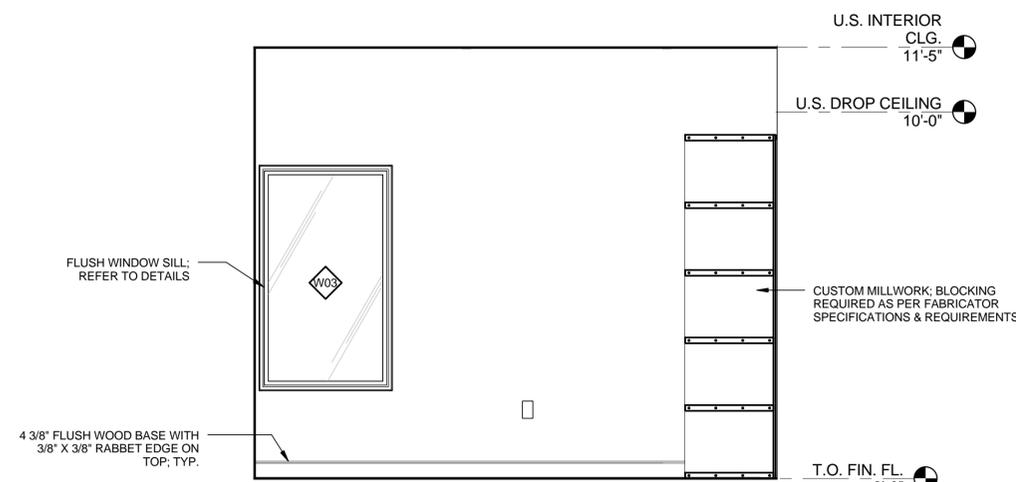
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**INTERIOR ELEVATIONS
FLEX ROOM**

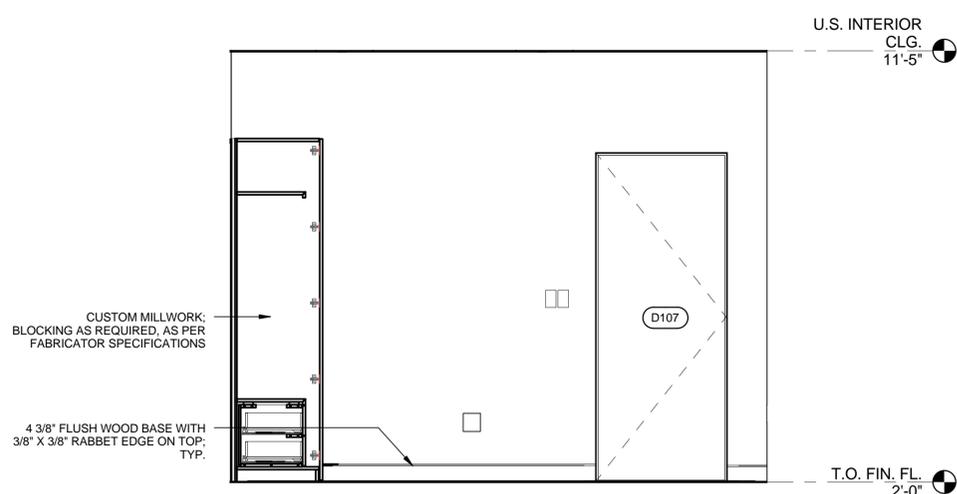
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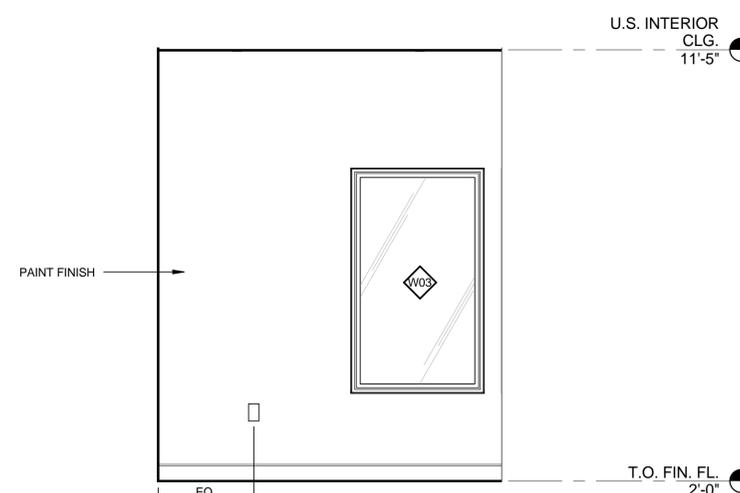
D1 FLEX ROOM - NORTH WALL
1/2" = 1'-0"



D5 FLEX ROOM - WEST WALL
1/2" = 1'-0"



A1 FLEX ROOM - EAST WALL
1/2" = 1'-0"



A5 FLEX ROOM - SOUTH WALL
1/2" = 1'-0"





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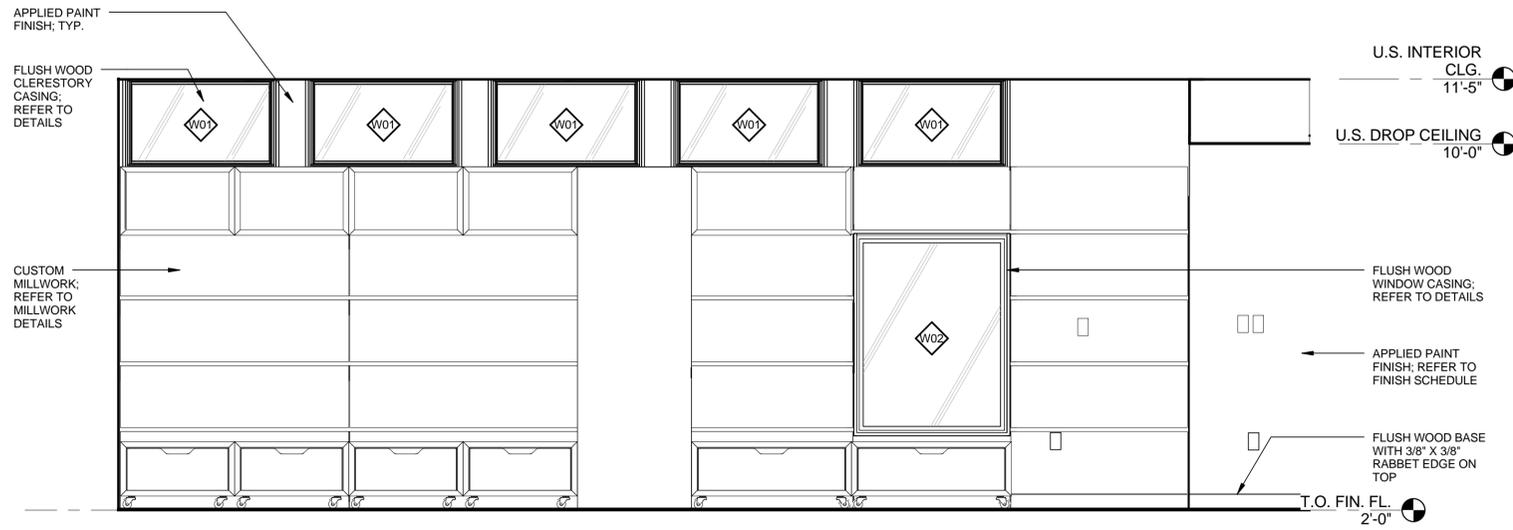


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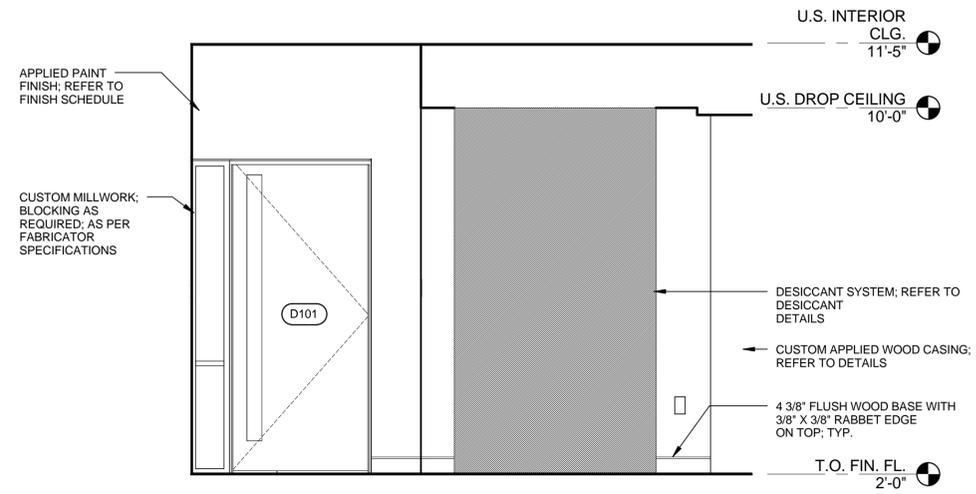
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INTERIOR ELEVATIONS
LIVING ROOM

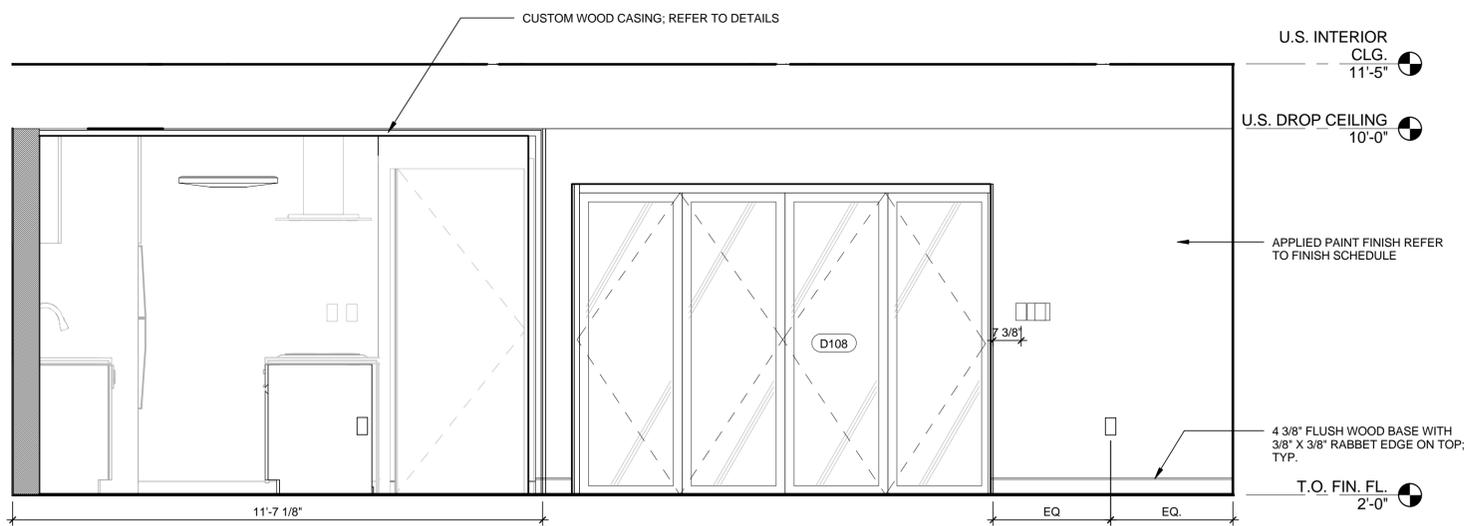
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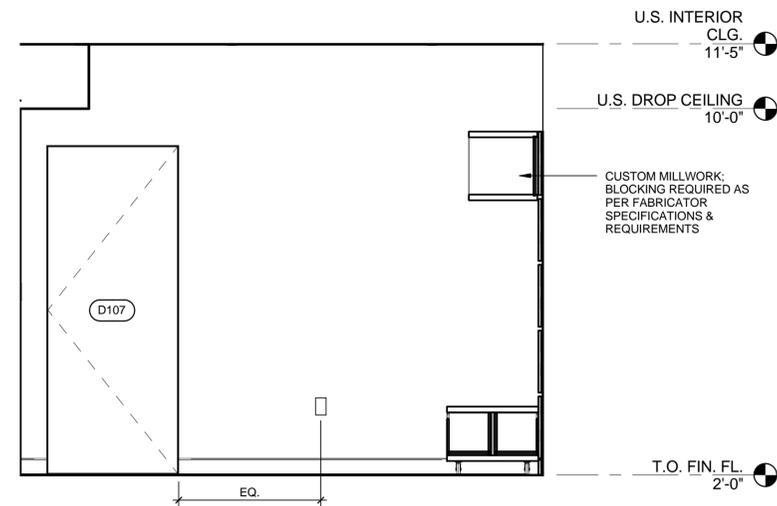
C1 LIVING ROOM - NORTH WALL
1/2" = 1'-0"



C5 LIVING ROOM - EAST WALL
1/2" = 1'-0"



A1 LIVING ROOM - SOUTH WALL
1/2" = 1'-0"



A5 LIVING ROOM - WEST WALL
1/2" = 1'-0"



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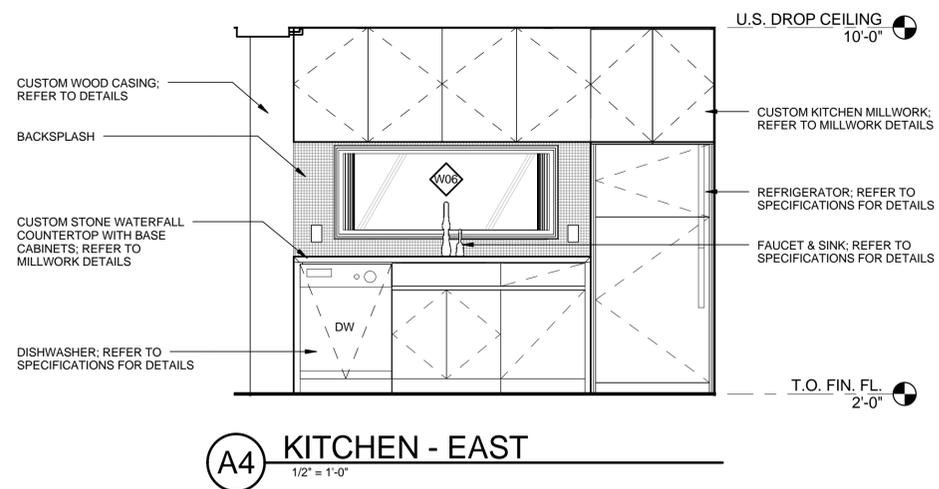
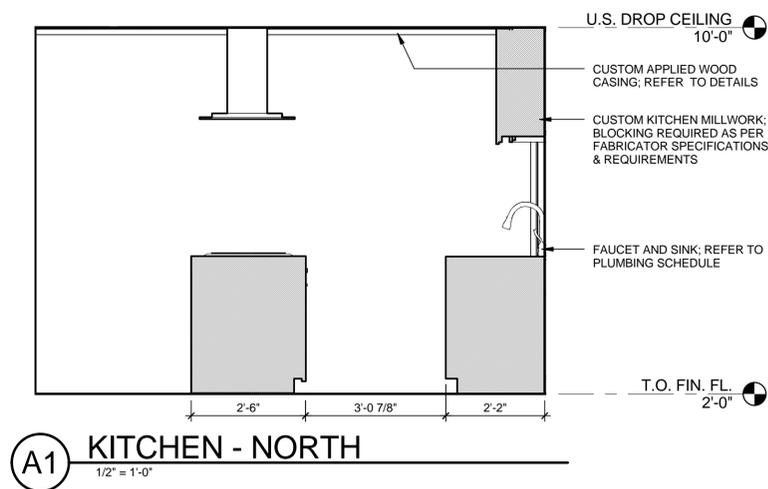
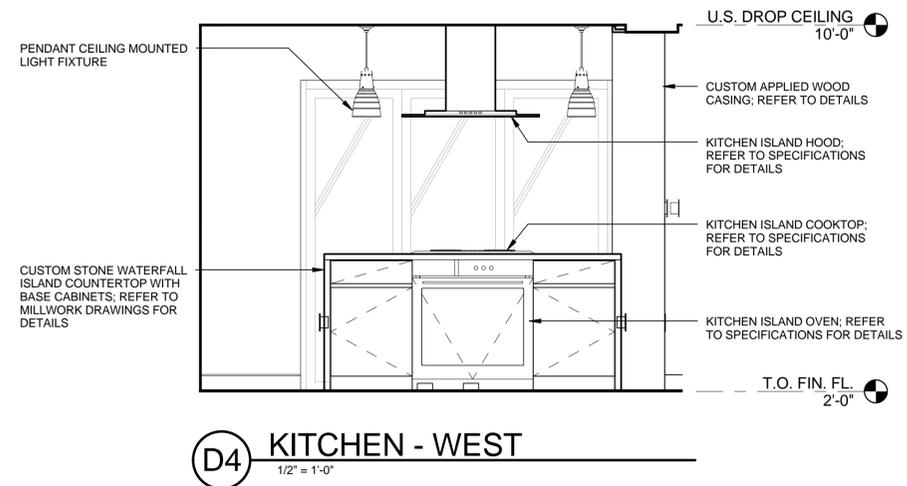
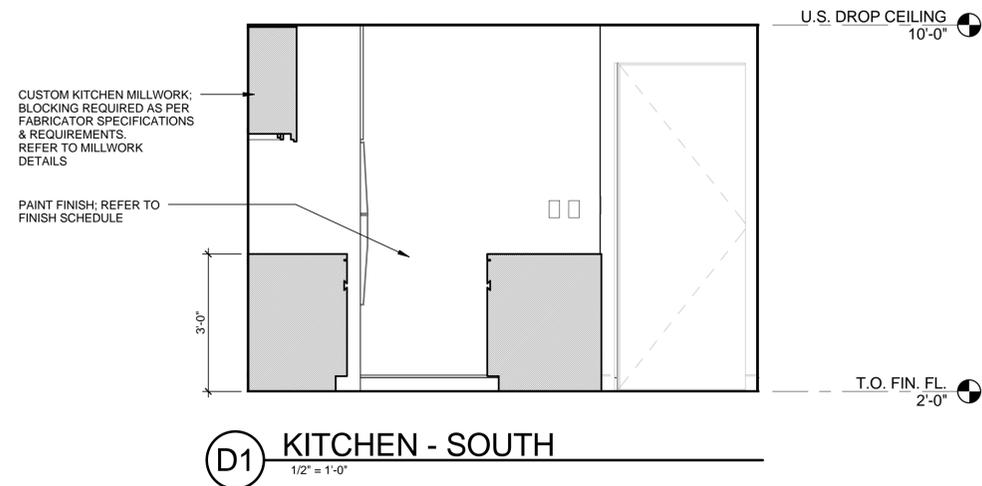
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**INTERIOR ELEVATIONS
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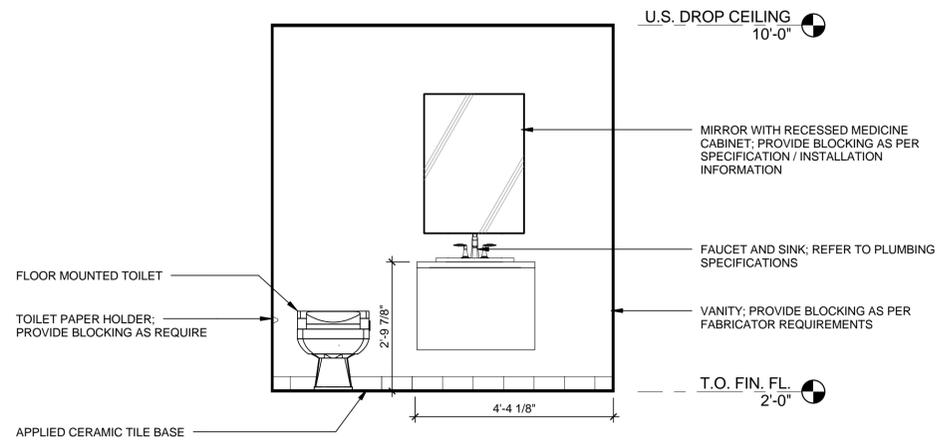


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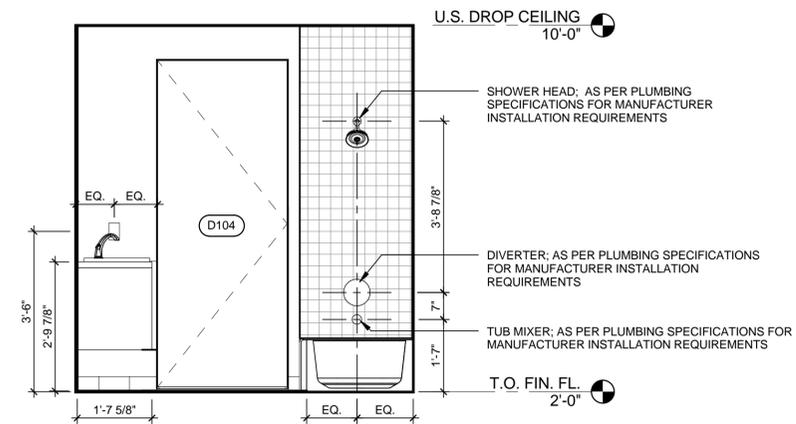
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**INTERIOR ELEVATIONS
BATHROOM**

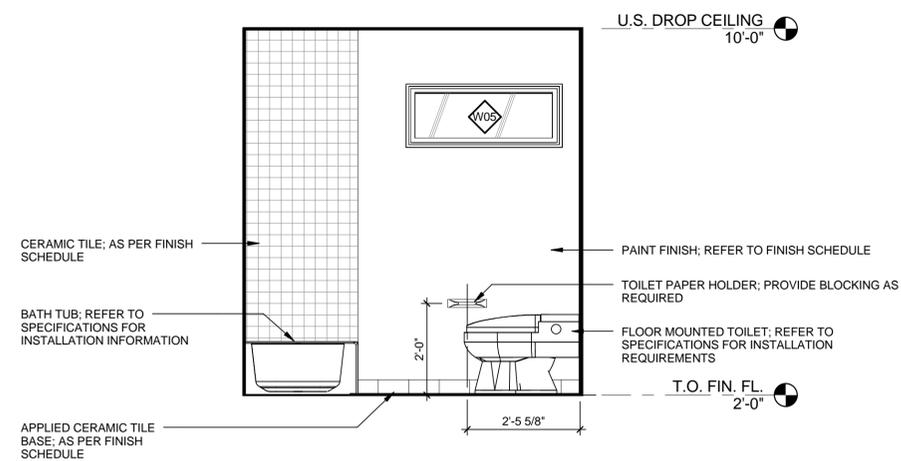
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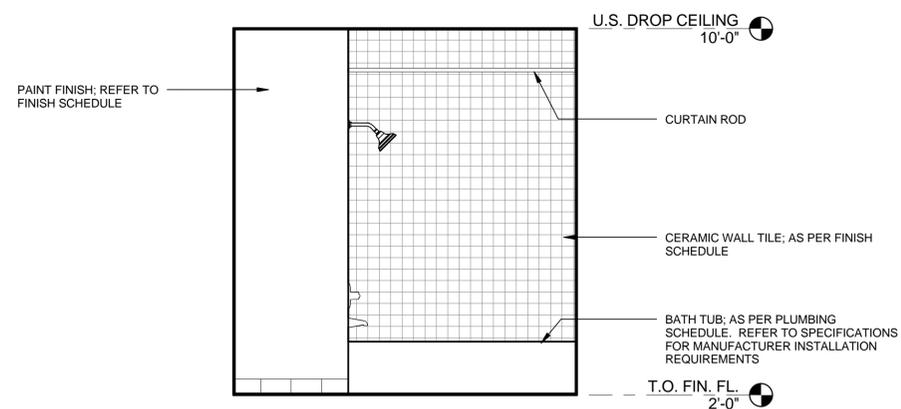
D1 BATHROOM - SOUTH
1/2" = 1'-0"



D4 BATHROOM - WEST
1/2" = 1'-0"



A1 BATHROOM - EAST
1/2" = 1'-0"



A4 BATHROOM - NORTH
1/2" = 1'-0"



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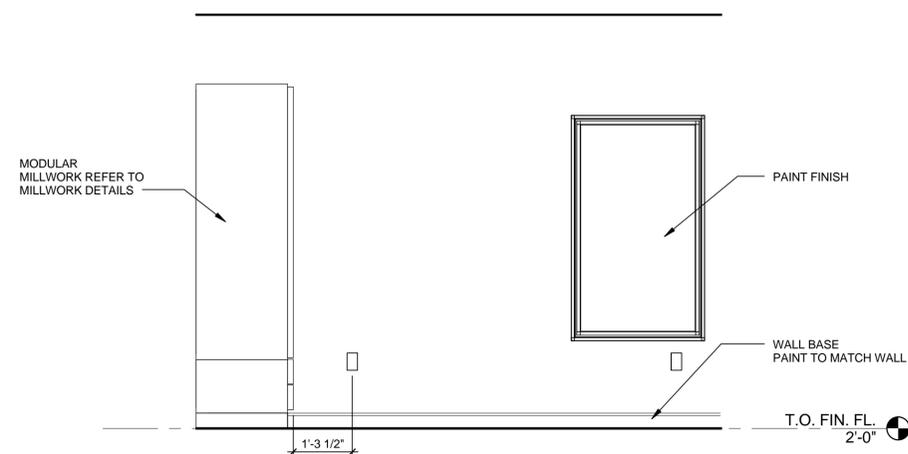


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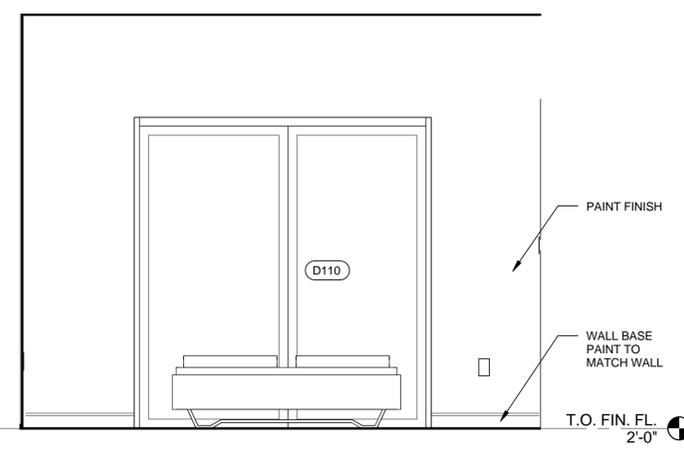
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**INTERIOR ELEVATIONS
MASTER BEDROOM**

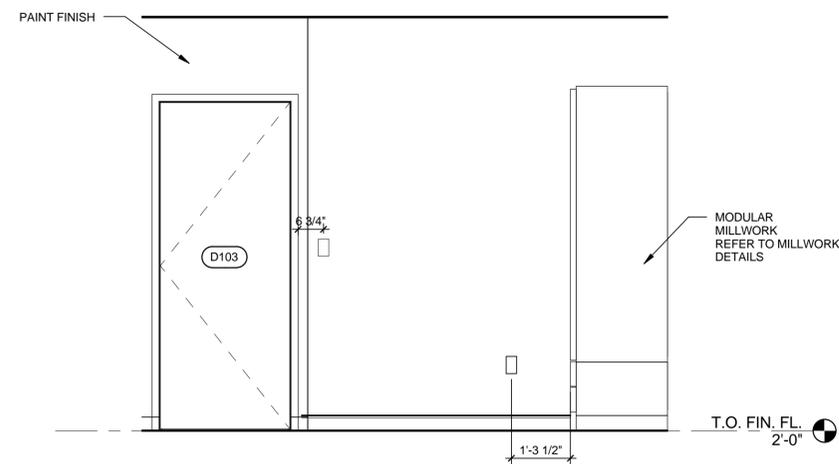
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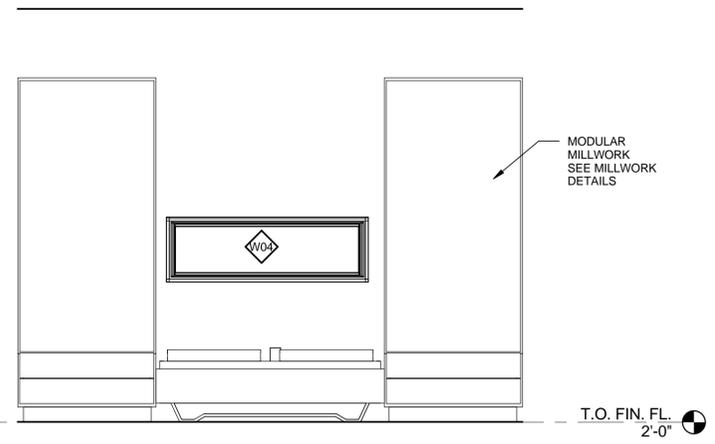
C3 BEDROOM - SOUTH
1/2" = 1'-0"



C4 BEDROOM - WEST
1/2" = 1'-0"



A1 BEDROOM - NORTH
1/2" = 1'-0"



A4 BEDROOM - EAST
1/2" = 1'-0"



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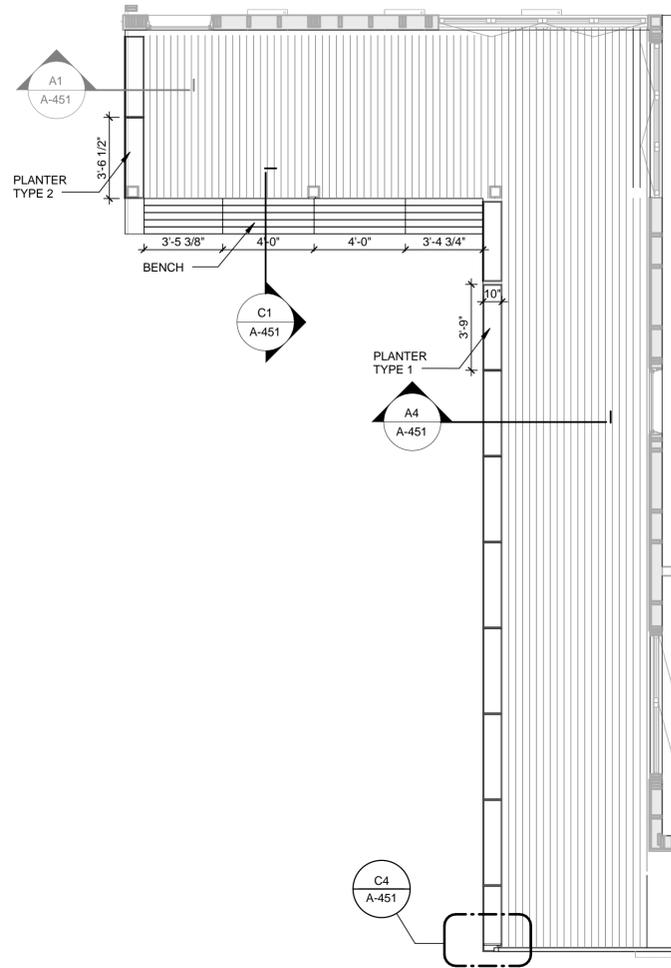
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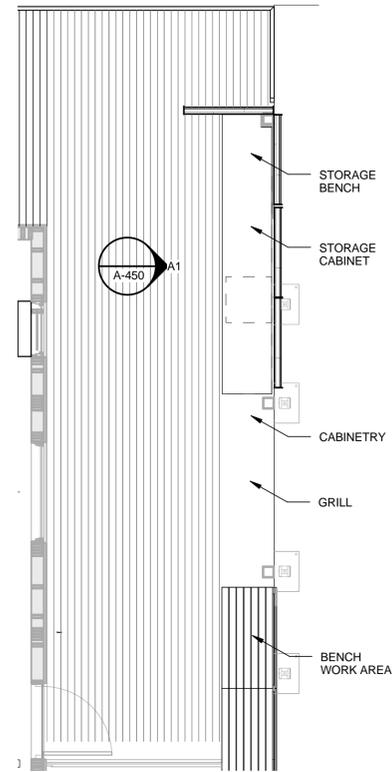
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SHEET TITLE
OUTDOOR MILLWORK

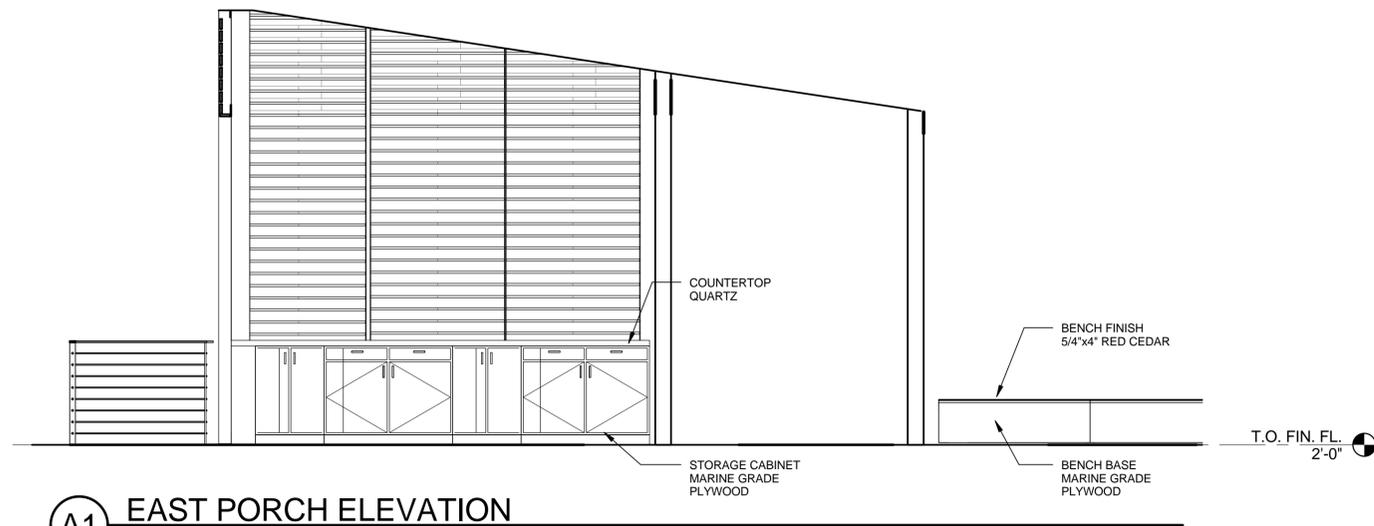
A-450



B1 WEST PORCH FLOOR PLAN
1/4" = 1'-0"



B4 EAST PORCH FLOOR PLAN
1/4" = 1'-0"



A1 EAST PORCH ELEVATION
3/8" = 1'-0"

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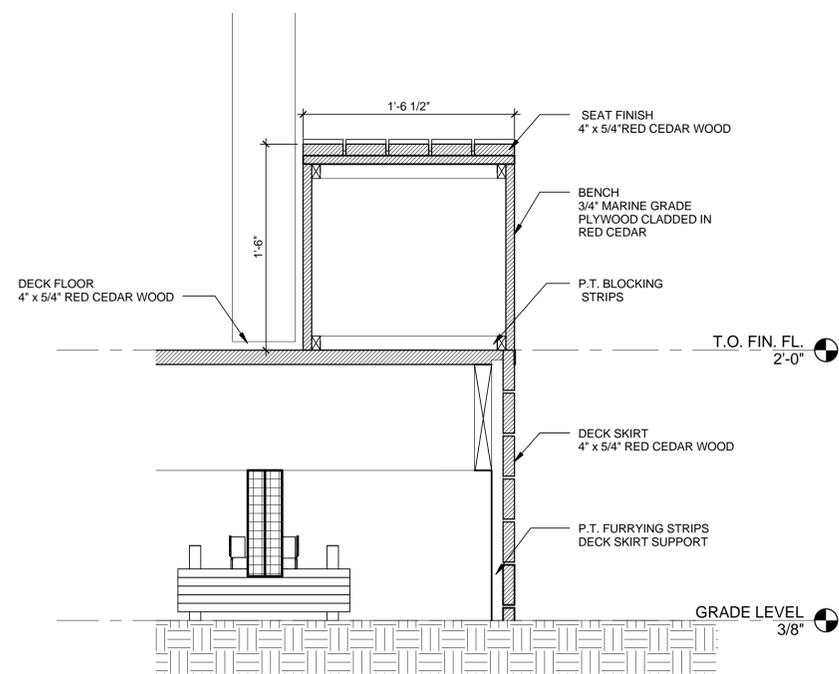
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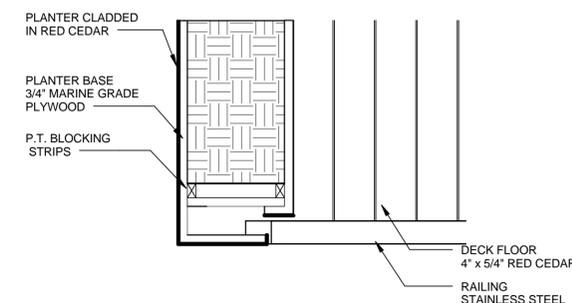
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**OUTDOOR MILLWORK
DETAILS**

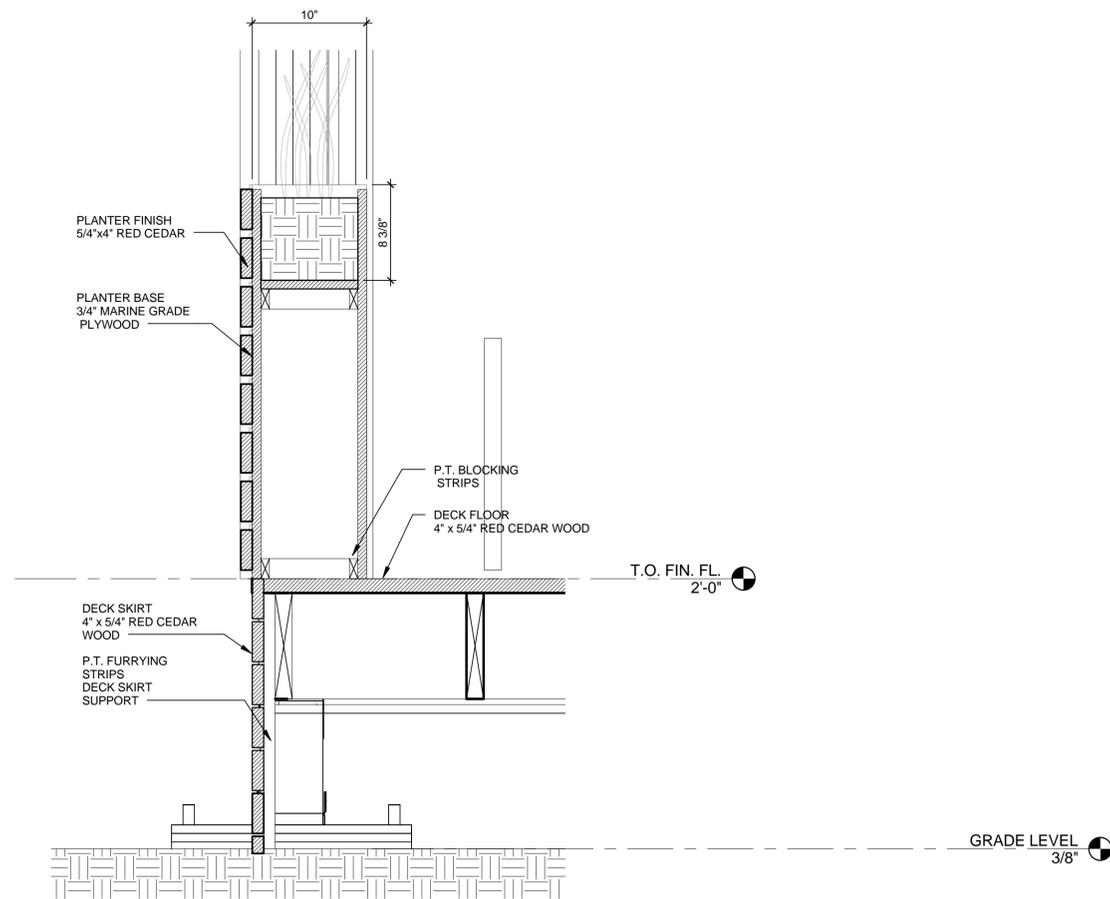
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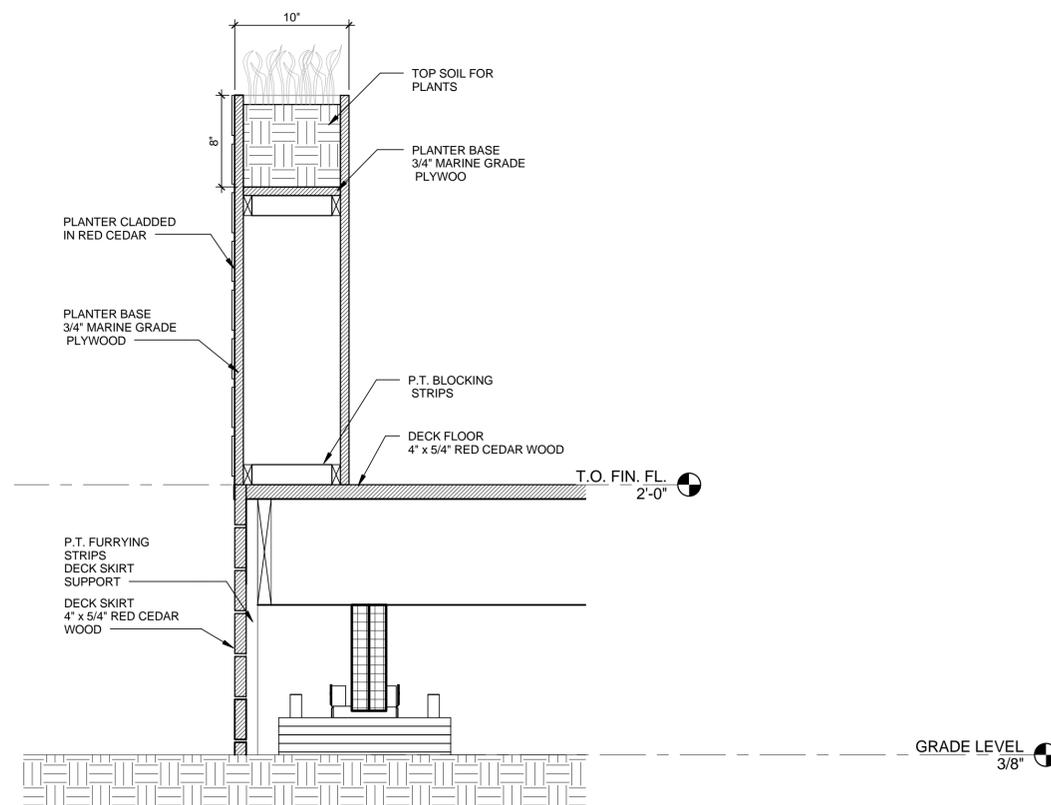
C1 BENCH TYP DETAIL
1 1/2" = 1'-0"



C4 RAILING- PLANTER JUNCTION DETAIL
1 1/2" = 1'-0"



A1 PLANTER TYPE 2 DETAIL
1 1/2" = 1'-0"



A4 PLANTER TYPE 1 DETAIL
1 1/2" = 1'-0"

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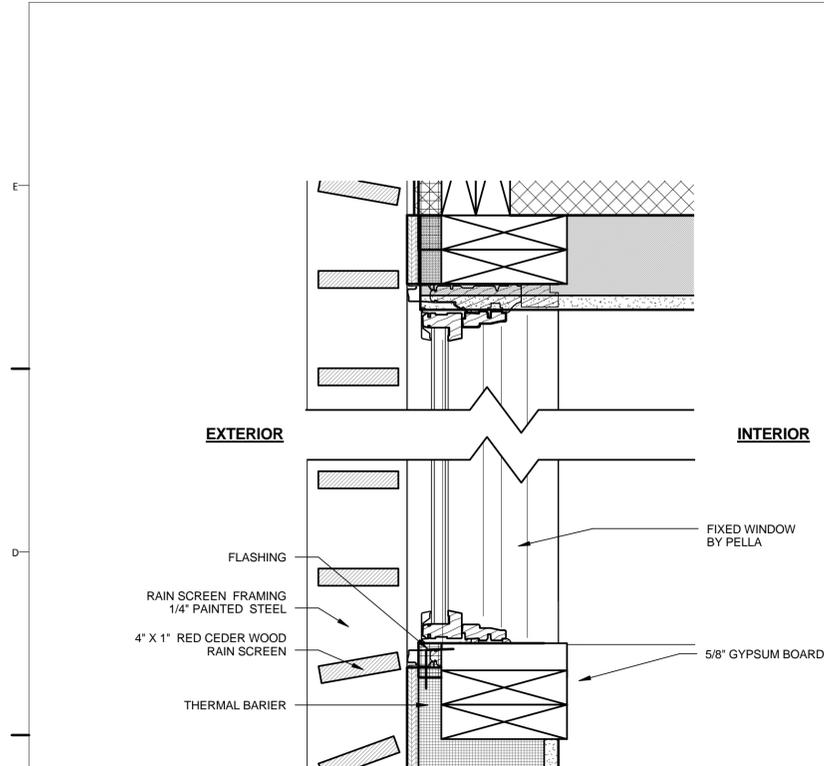


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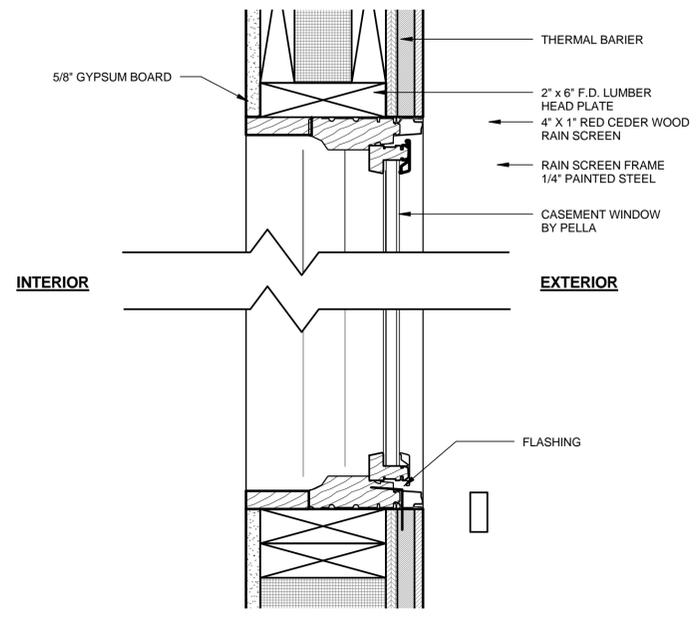
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WINDOW DETAILS

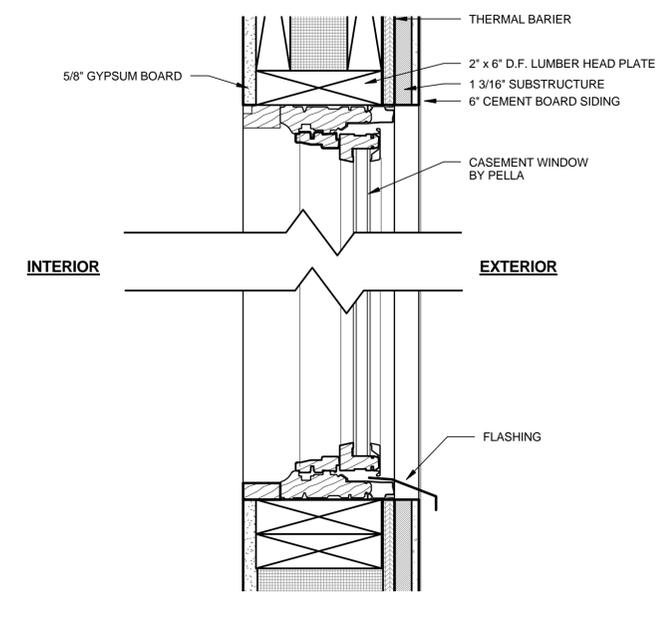
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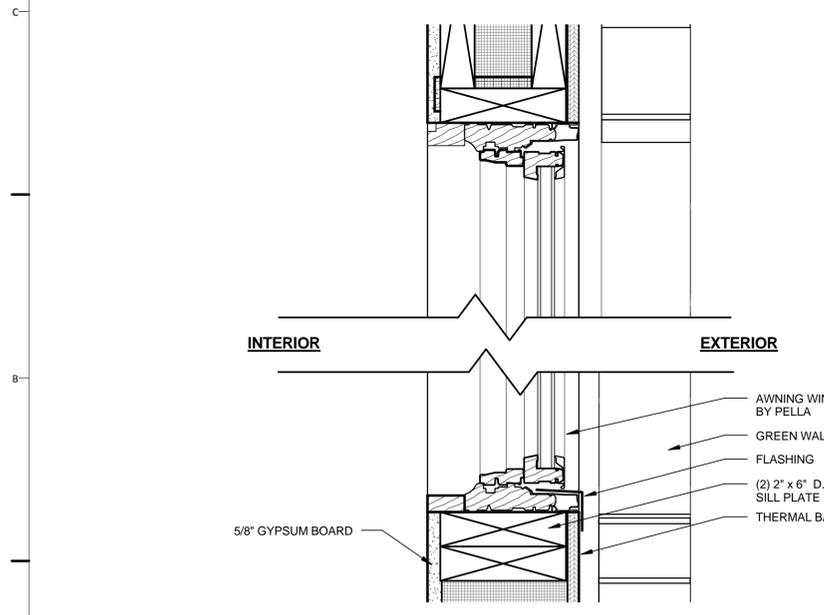
D1 CLERESTORY-FIXED AWNING WINDOW
3" = 1'-0"



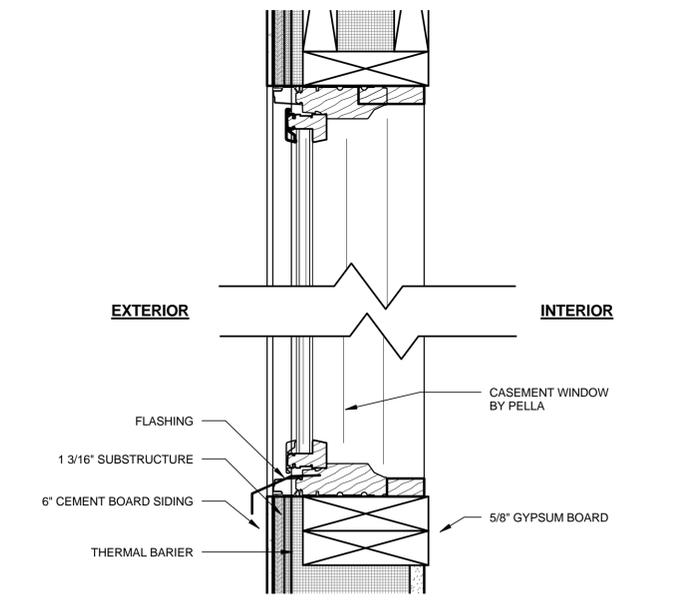
D3 DRY MODULE-CASEMENT WINDOW
3" = 1'-0"



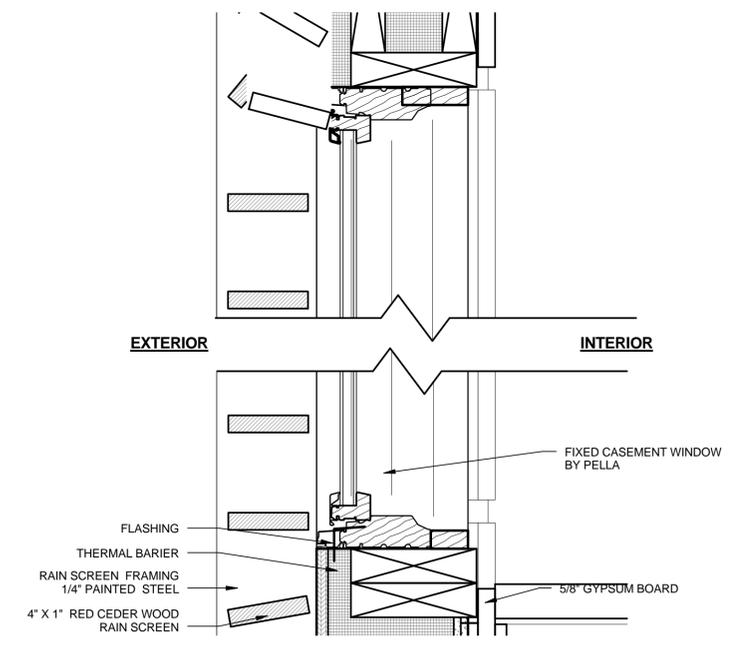
D5 WET MODULE-CASEMENT WINDOW
3" = 1'-0"



A1 BEDROOM-AWNING WINDOW
3" = 1'-0"



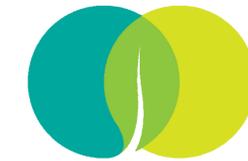
A3 HALLWAY-CASEMENT WINDOW
3" = 1'-0"



A5 DRY MODULE-FIXED CASEMENT WINDOW
3" = 1'-0"



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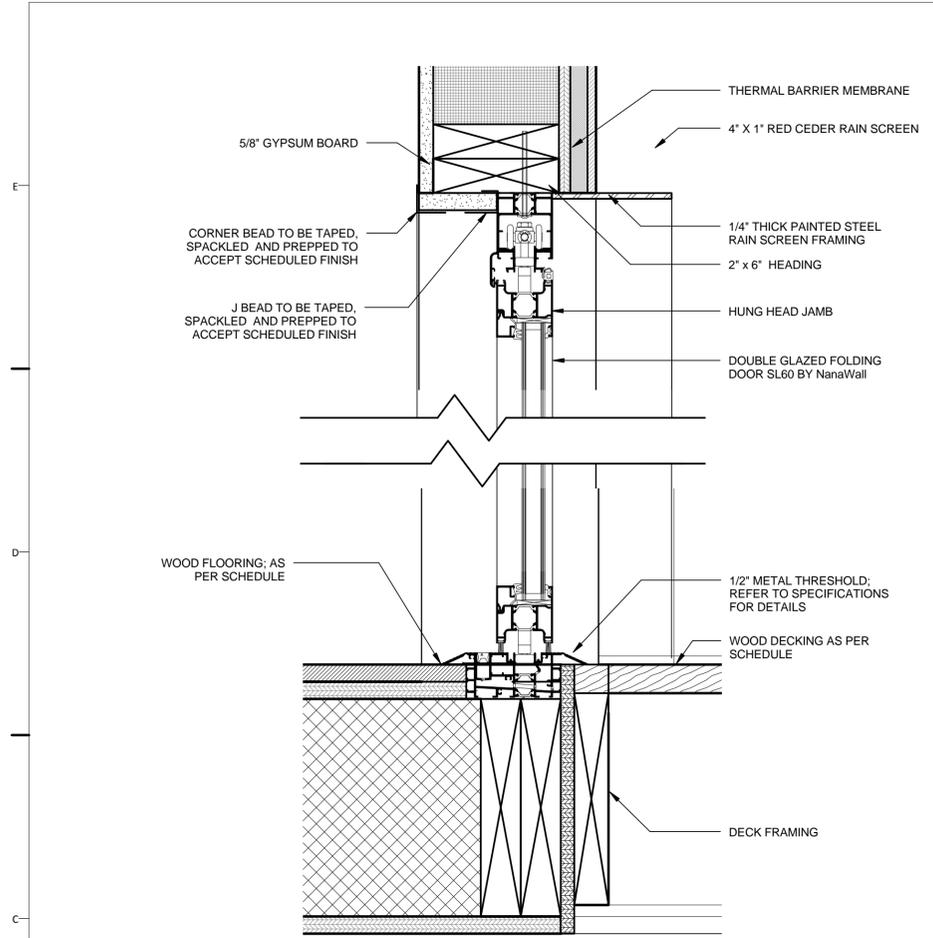


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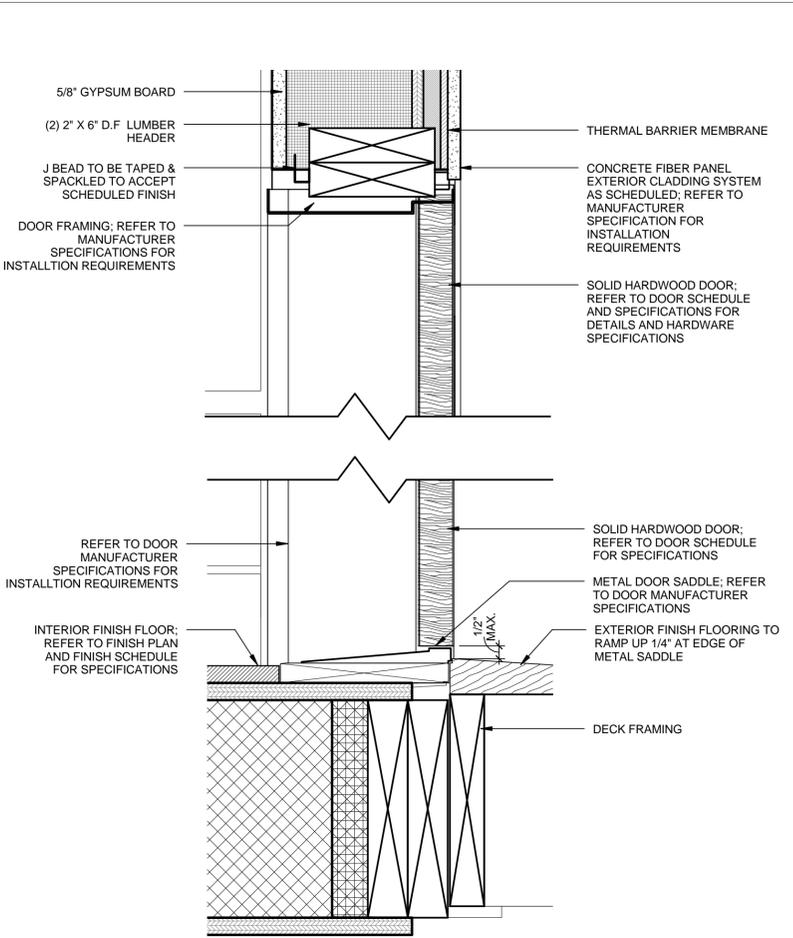
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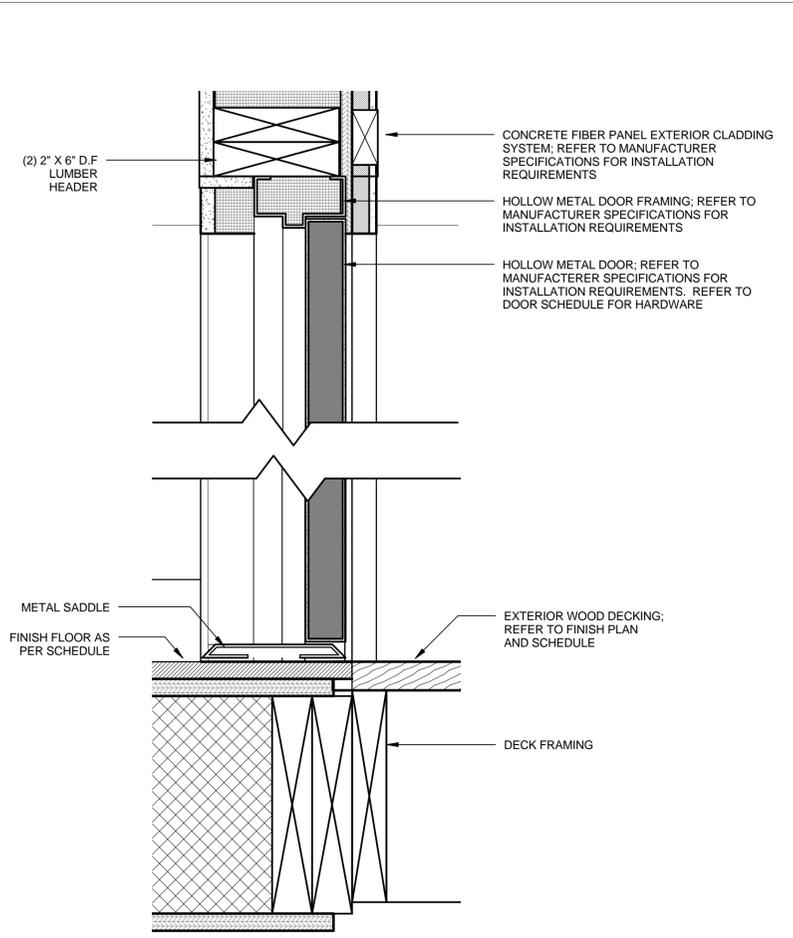
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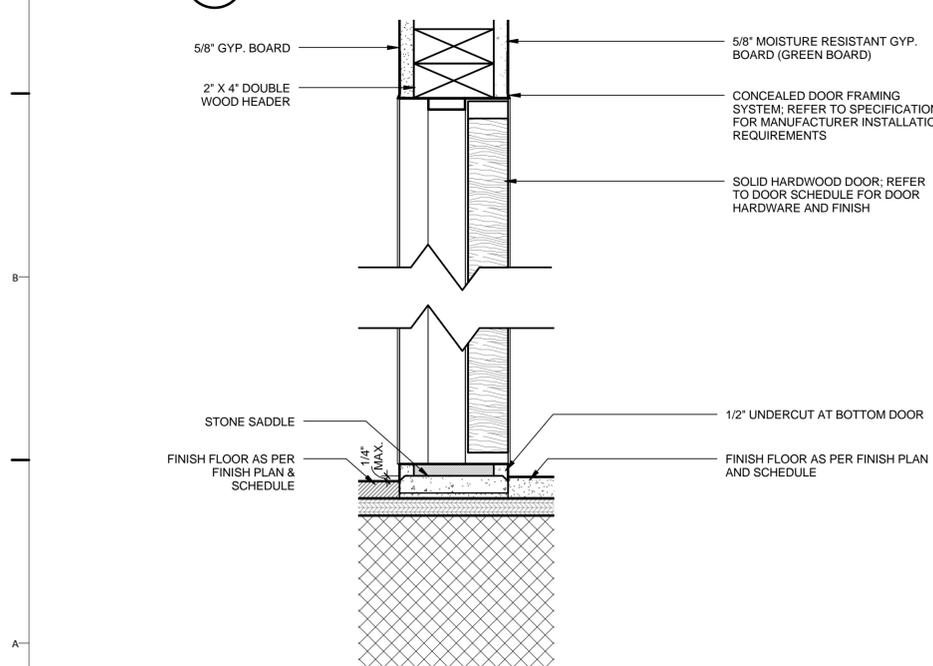
C1 NanaWall FOLDING DOOR DETAIL
3" = 1'-0"



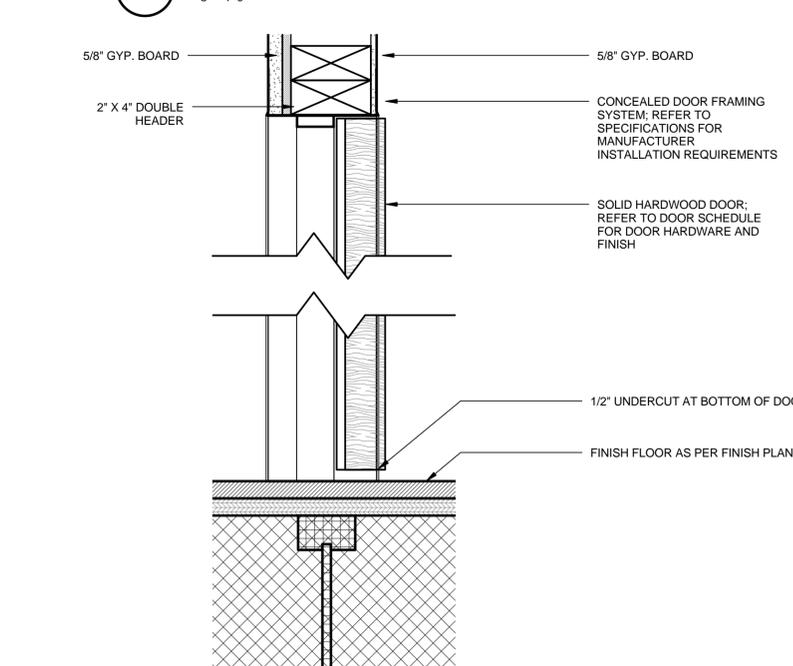
C3 ENTRANCE DOOR DETAIL
3" = 1'-0"



C5 MECHANICAL ROOM DOOR DETAIL
3" = 1'-0"



A1 BATHROOM DOOR DETAIL
3" = 1'-0"



A3 BEDROOM DOOR DETAIL
3" = 1'-0"



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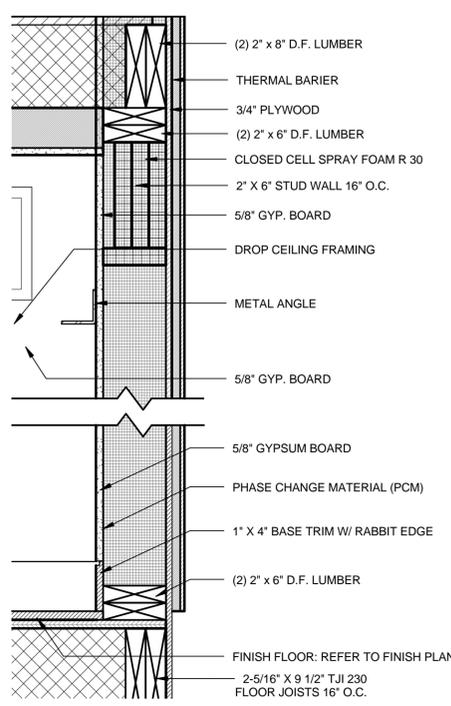


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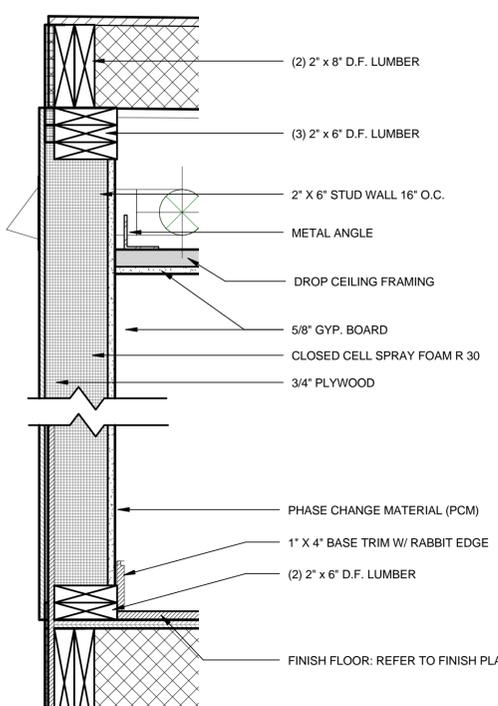
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WALL TYPES

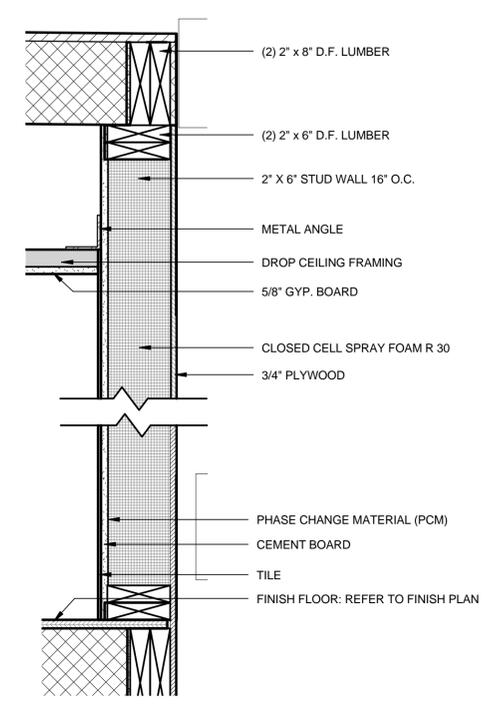
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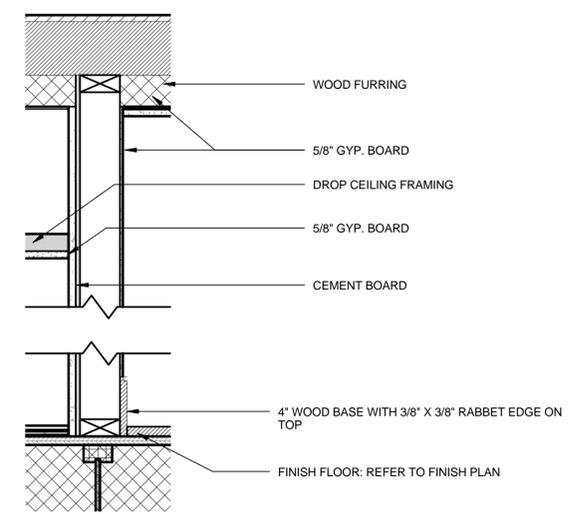
C1 TYP. EXT. WALL
1 1/2" = 1'-0"



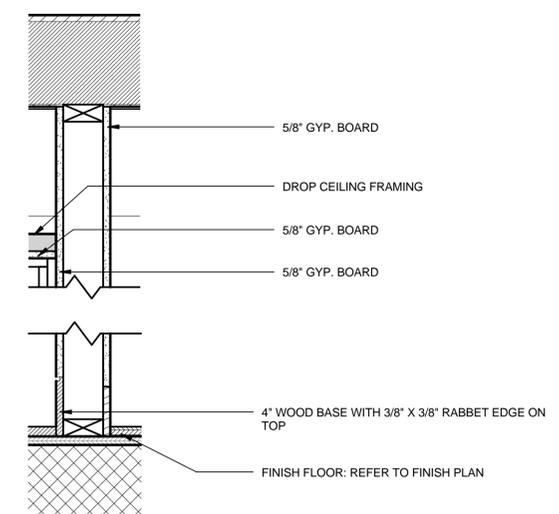
C3 EXT. WET MODULE WEST WALL
1 1/2" = 1'-0"



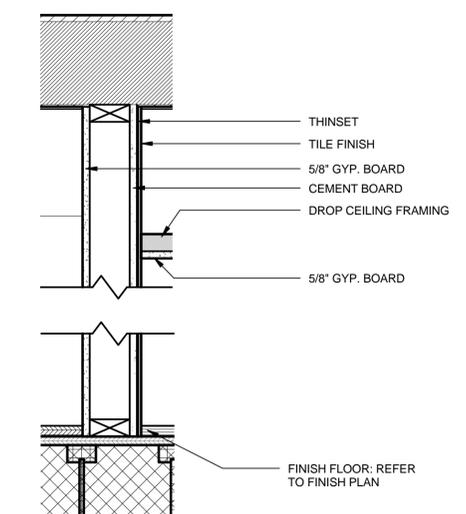
C5 TYP. EXT. TILED WALL
1 1/2" = 1'-0"



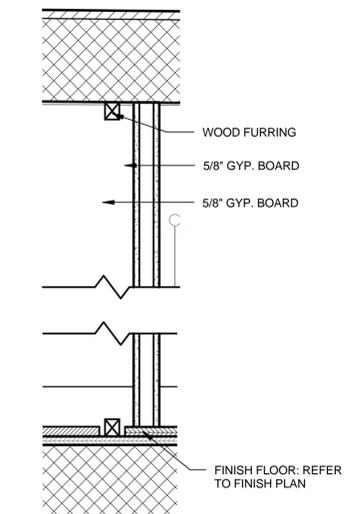
A1 TYP. INT. PARTITION WET WALL
1 1/2" = 1'-0"



A3 TYP. INT. PARTITION WALL
1 1/2" = 1'-0"



A5 TYP. INT. PARTITION TILE WALL
1 1/2" = 1'-0"



A6 INT. PARTITION WALL
1 1/2" = 1'-0"

8/22/2013 6:56:50 PM



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LOT NUMBER
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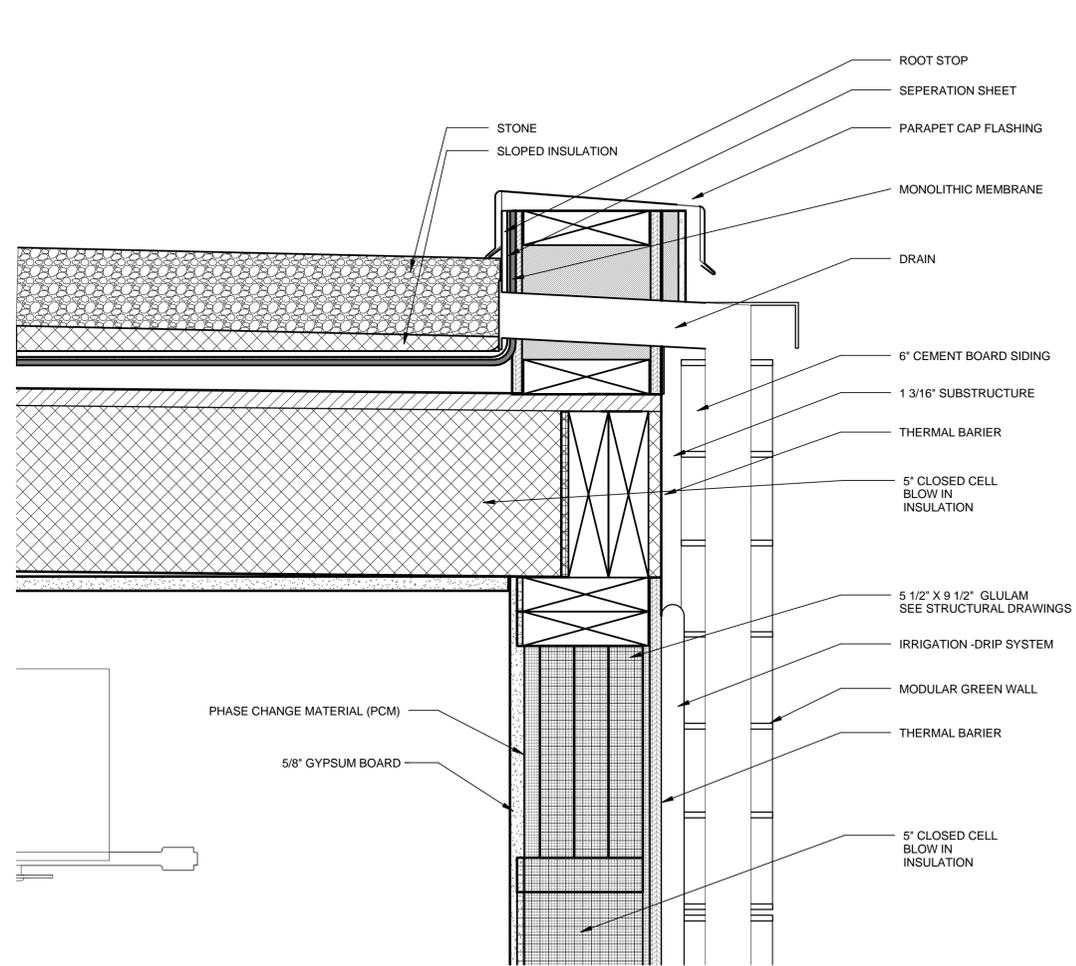
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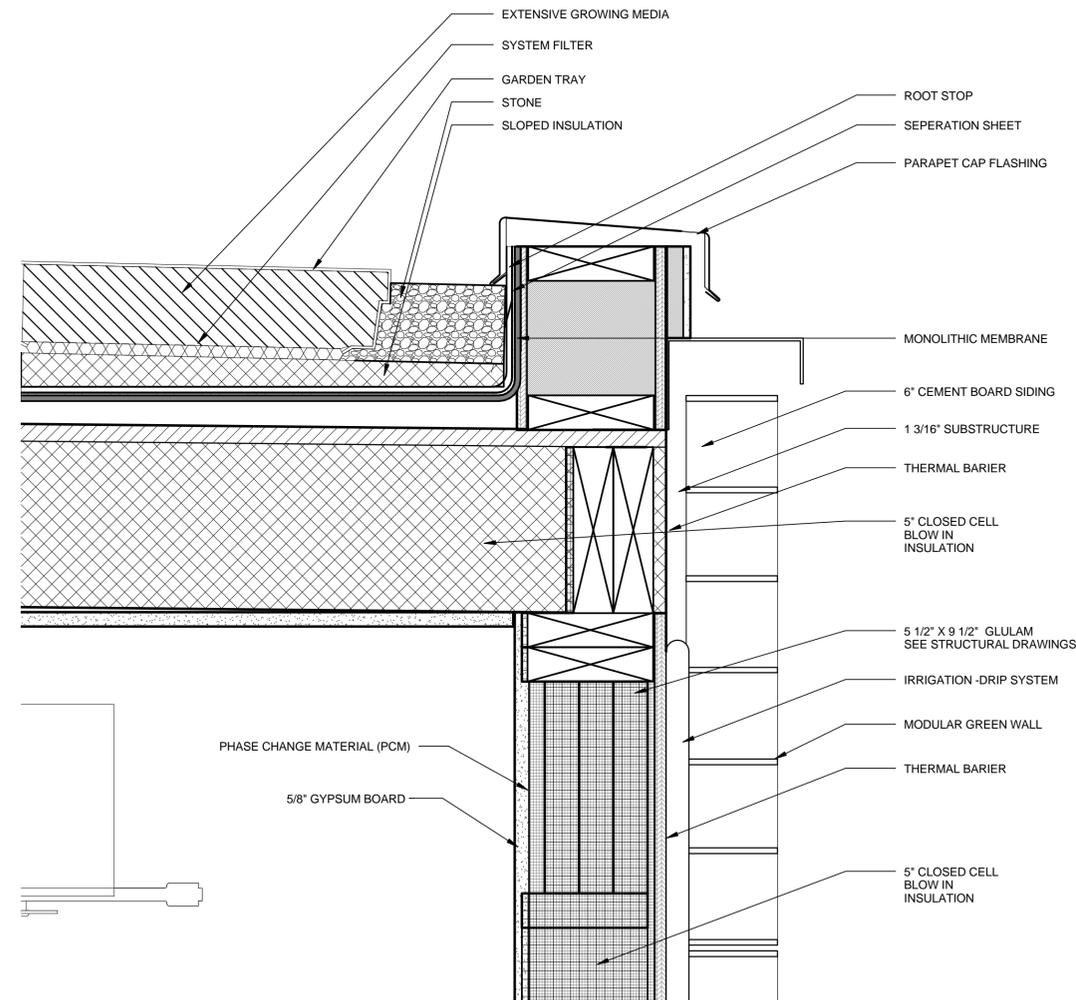
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SHEET TITLE
**WET MODULE ROOF
DETAILS**

A-561



A1 WET MODULE - DRAINAGE - GREEN WALL
3" = 1'-0"



A4 WET MODULE - NO DRAINAGE GREEN ROOF
3" = 1'-0"





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LOT NUMBER
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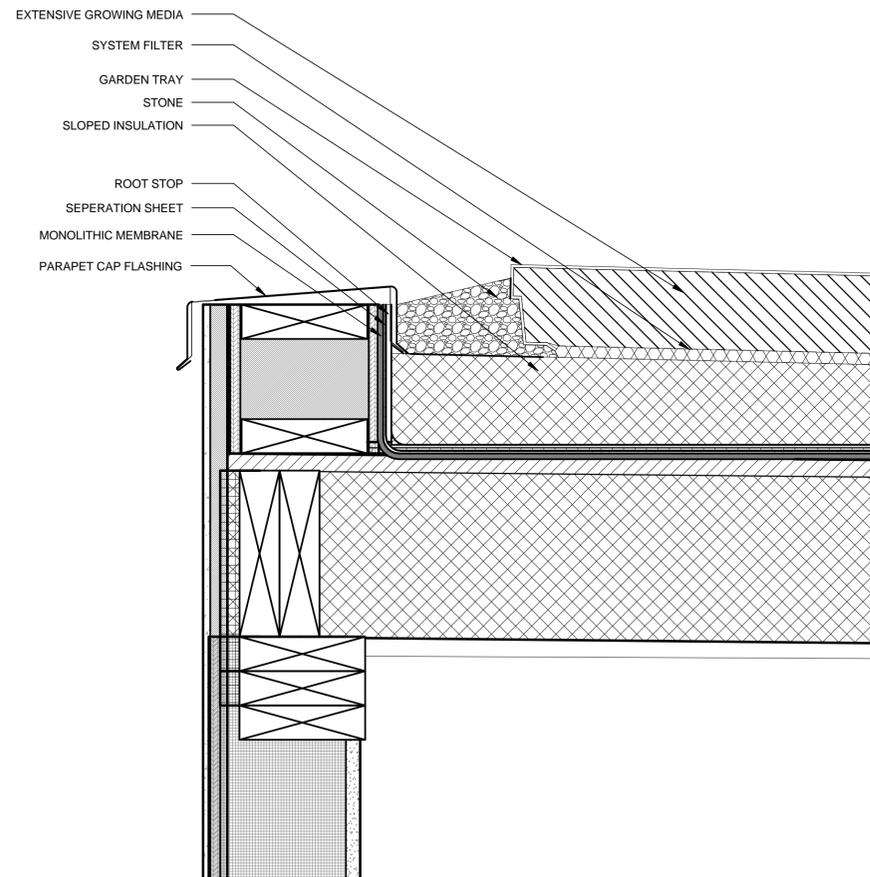
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SHEET TITLE
**WET MODULE ROOF
DETAILS**

A-562



A4 WET MODULE - NO DRAINAGE GREEN ROOF - WEST
3" = 1'-0"

8/22/2013 3:02:49 PM

E
D
C
B
A

1 2 3 4 5 6 7

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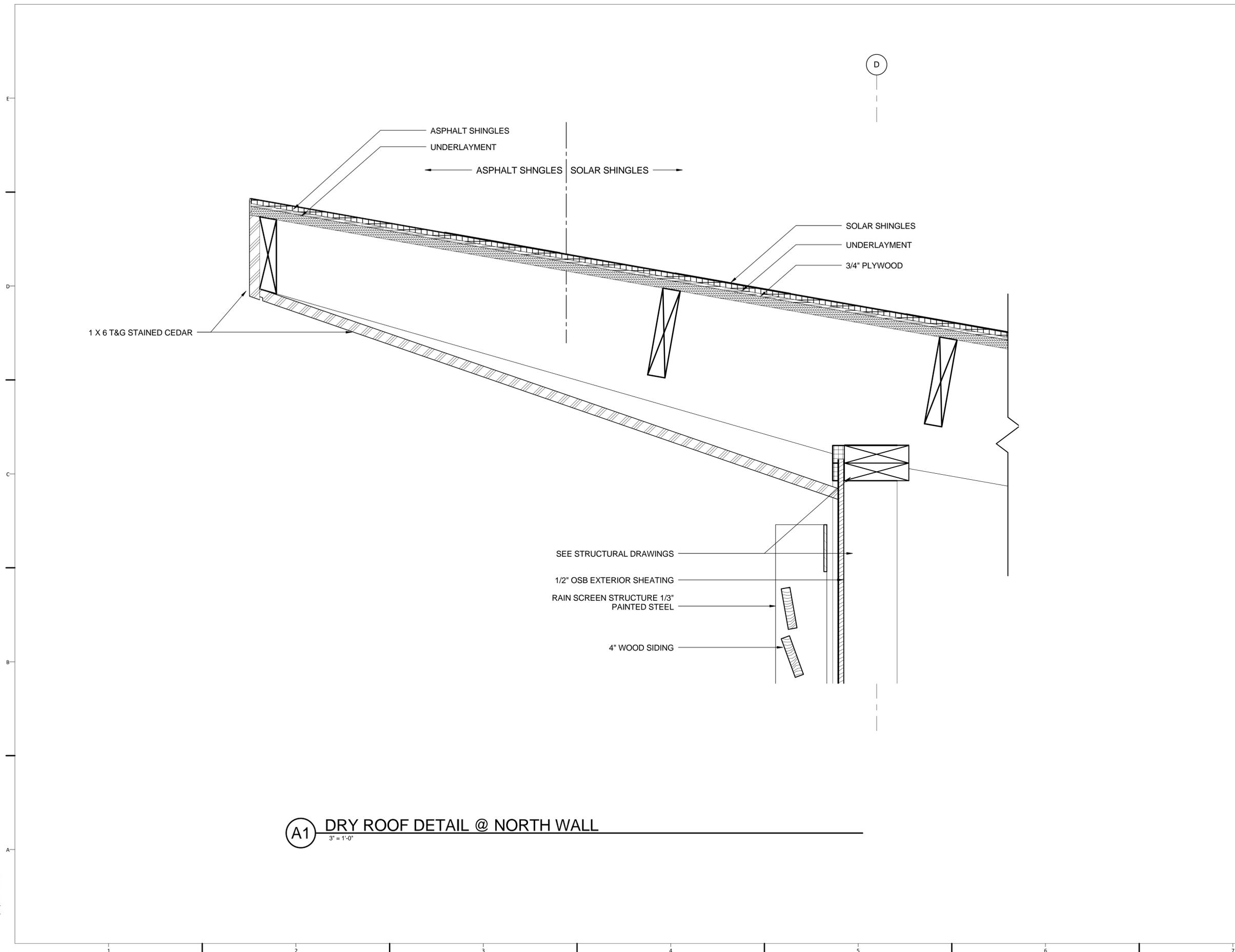
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SHEET TITLE
**DRY MODULE ROOF
DETAILS**

A-571



(A1) DRY ROOF DETAIL @ NORTH WALL
3" = 1'-0"

8/22/2013 3:01:13 PM



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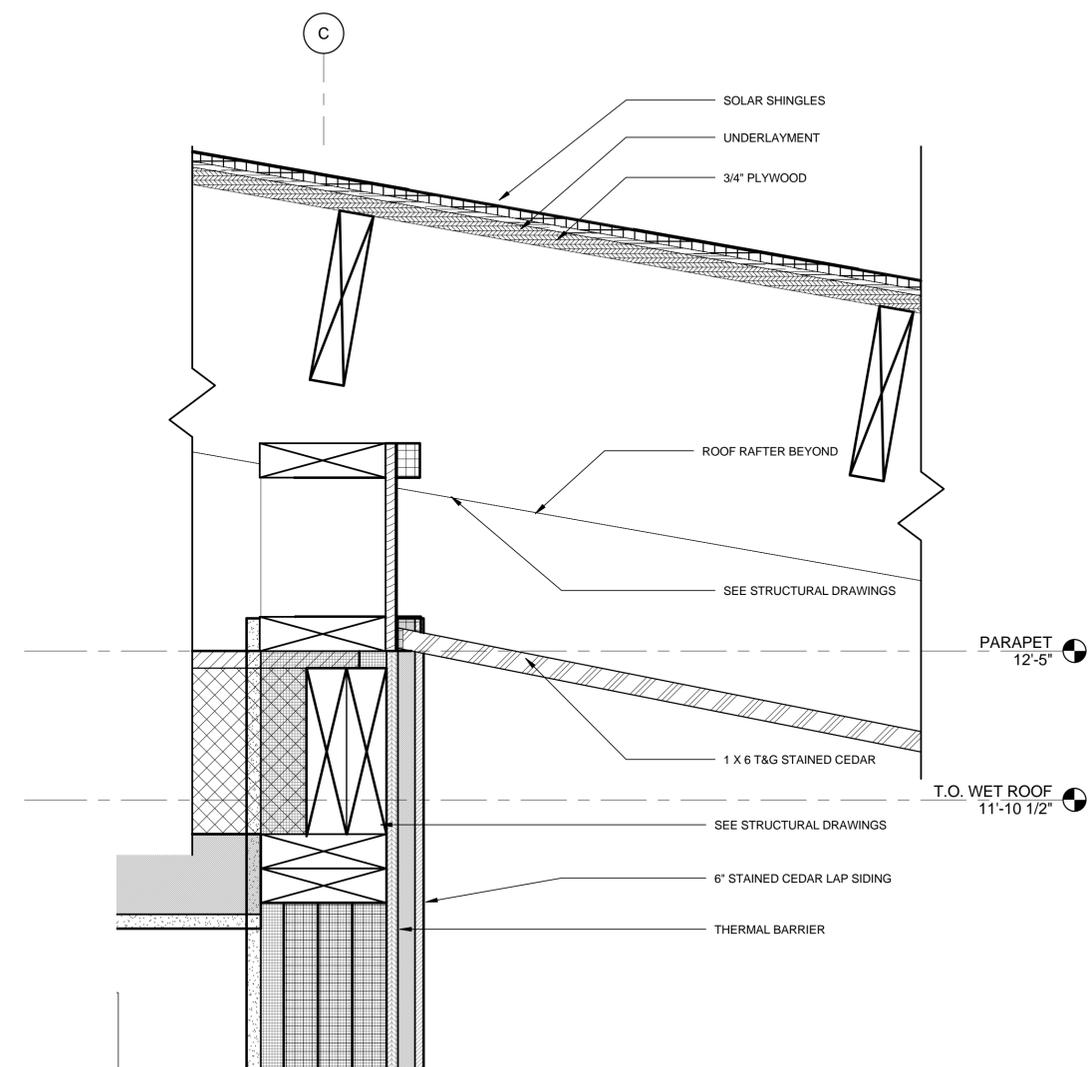
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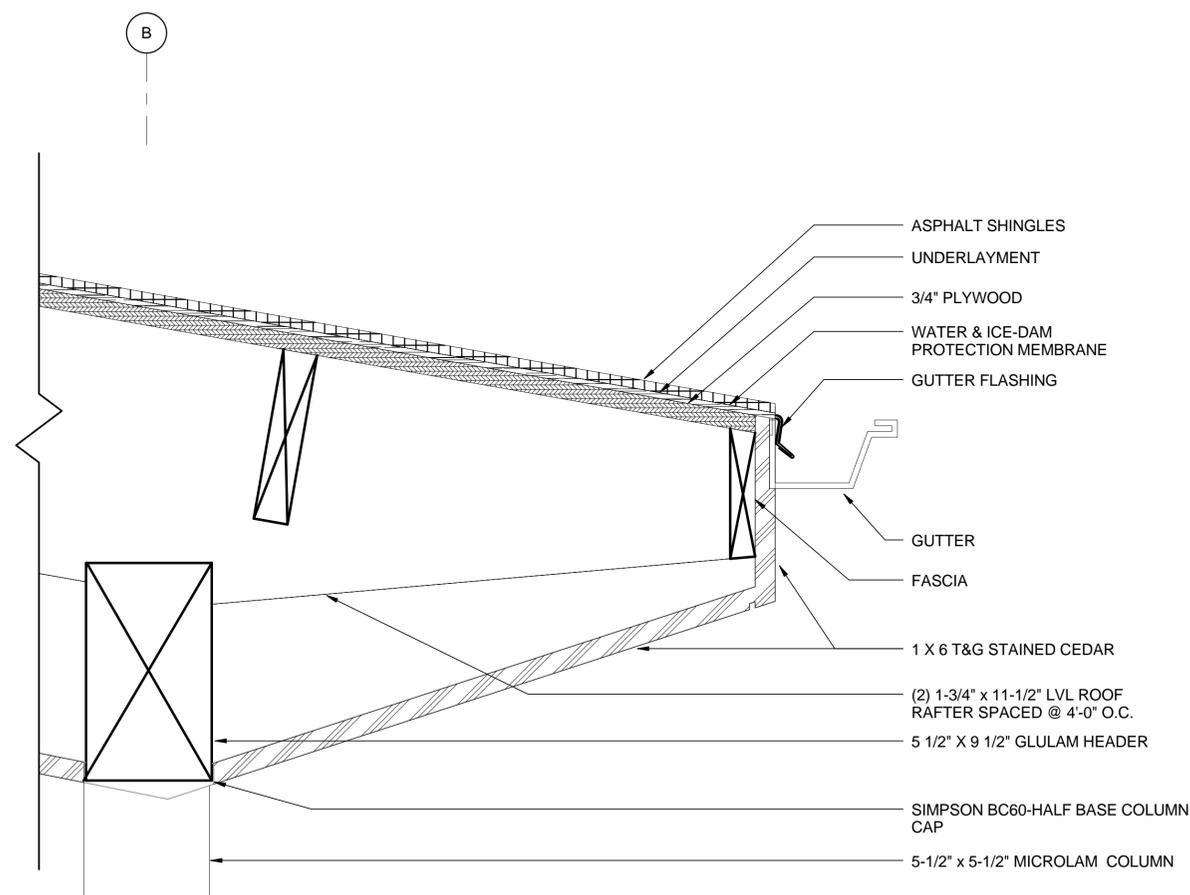
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SHEET TITLE
**DRY MODULE ROOF
DETAIL**

A-572



A1 DRY ROOF DETAIL @ SOUTH WALL
3" = 1'-0"



A4 DRY MODULE ROOF SOUTH
3" = 1'-0"

8/22/2013 2:58:11 PM



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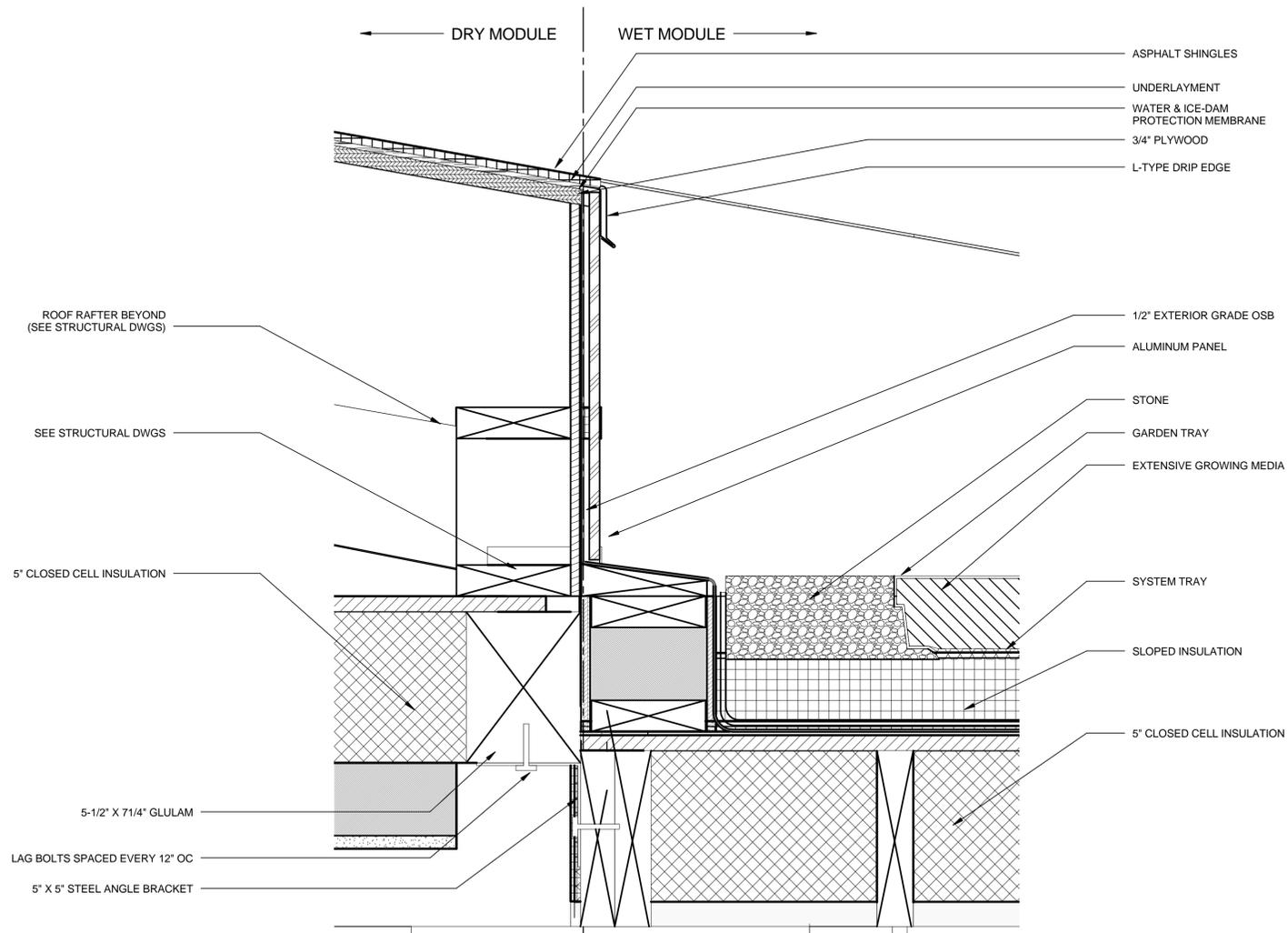
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SHEET TITLE
ROOF DETAIL

A-573



(A2) DETAIL MODULE CONNECTION
3" = 1'-0"

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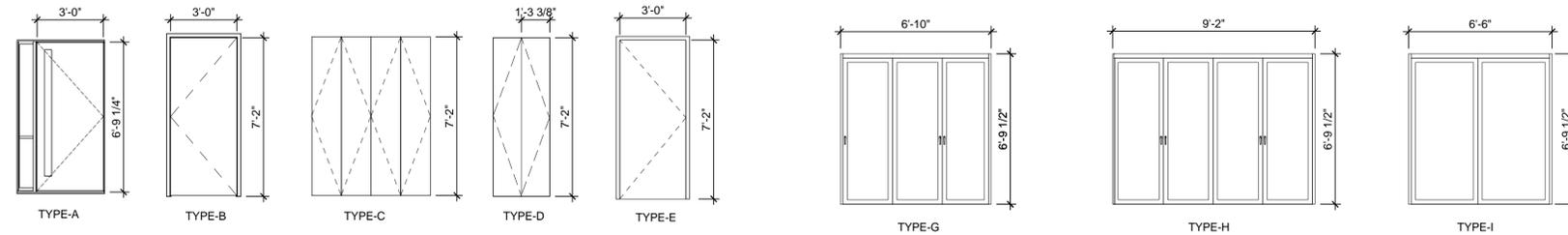
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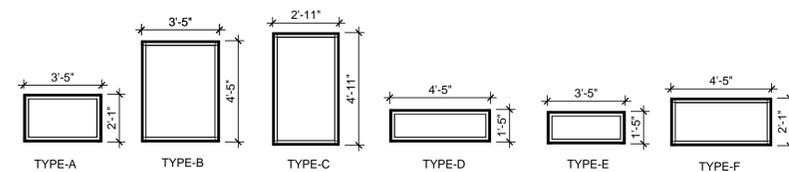
SHEET TITLE

SCHEDULES



MARK	TYPE	DESCRIPTION	Width	HEIGHT	MANUFACTURER	MODEL	FRAME TYPE	FIRE RATING	DETAILS			FINISH		HARDWARE SET
									HEAD	JAMB	SILL	DOOR	FRAME	
D101	A	Entry Door	3'-0"	6'-9 1/2"	A&L Windows	ADF 1210	WOOD		C3	C3	C3	PAINT	Exterior	HWS-01
D102	E	Hollow Metal Door	3'-0"	6'-9 1/2"	Ceco	TBC	METAL		C5	C5	C5	PAINT	Exterior	HWS-02
D103	B	Interior Flush Slab Swing w/ Concealed Frame	2'-10"	7'-2"	Jeld Win	TBC	METAL		A3	A3	A3	PAINT	Interior	HWS-03
D104	B	Interior Flush Slab Swing w/ Concealed Frame	2'-10"	7'-2"	Jeld Win	TBC	METAL		A1	A1	A1	PAINT	Interior	HWS-04
D105	B	Interior Flush Slab Swing w/ No Casing	2'-6 3/4"	7'-2"	Custom	N/A	N/A					PAINT	Interior	HWS-05
D106	C	Interior Flush Slab Double Swing / No Casing	2'-10 1/8"	7'-2"	Custom	N/A	N/A					PAINT	Interior	HWS-06
D107	D	Interior Flush Slab Swing w/ Concealed Frame	2'-10"	7'-2"	Jeld Win	TBC	METAL		A3	A3	A3	PAINT	Interior	HWS-07

MARK	TYPE	DESCRIPTION	Width	HEIGHT	MANUFACTURER	MODEL	FRAME TYPE	FIRE RATING	DETAILS	GLAZING	FINISH	HARDWARE SET		
D108	H	4 PANELS OUTWARD OPENING	9' - 2"	6' - 10"	NanaWall	SL60	ALUM.		TOP HUNG	FLUSH	ALUM.	DOUBLE IG CLEAR (AIR FILLED)	JET BLACK	BLACK TITANIUM
D109	G	3 PANELS OUTWARD OPENING	6' - 10"	6' - 10"	NanaWall	SL60	ALUM.		TOP HUNG	FLUSH	ALUM.	DOUBLE IG CLEAR (AIR FILLED)	JET BLACK	BLACK TITANIUM
D109	I	1 FIXED PANEL 1 OUTWARD SWING	6' - 6"	6' - 10"	NanaWall	SL60	ALUM.		TOP HUNG	FLUSH	ALUM.	DOUBLE IG CLEAR (AIR FILLED)	JET BLACK	BLACK TITANIUM



MARK	TYPE	ROUGH OPENING		MANUFACTURER	MODEL	DESCRIPTION	MATERIAL	FINISH	DETAIL		GLAZING		HEAD HEIGHT	COMMENTS
		WIDTH	HEIGHT						JAMB	SILL	THICKNESS	TYPE		
W01	A	3'-5"	2'-1"	Pella Windows & Doors	Proline 4125	Proline Clad Wood - Awning Vent	Pinewood Inside/Alum Clad Outside	Black				SunDefense Low-E Insulating Double Pan Glass, with Argon	9'-6"	SEE SPEC SHEET
W02	B	3'-5"	4'-5"	Pella Windows & Doors	Proline 4153	Proline Clad Wood - Casement Vent	Pinewood Inside/Alum Clad Outside	Black				SunDefense Low-E Insulating Double Pan Glass, with Argon	6'-0 1/2"	SEE SPEC SHEET
W03	C	2'-11"	4'-11"	Pella Windows & Doors	Proline 3559	Proline Clad Wood - Casement Vent	Pinewood Inside/Alum Clad Outside	Black				SunDefense Low-E Insulating Double Pan Glass, with Argon	6'-10"	SEE SPEC SHEET
W03	C	2'-11"	4'-11"	Pella Windows & Doors	Proline 3559	Proline Clad Wood - Casement Vent								
W04	D	4'-5"	1'-5"	Pella Windows & Doors	Proline 5917-F	Proline Clad Wood - Awning Vent	Pinewood Inside/Alum Clad Outside	Black				SunDefense Low-E Insulating Double Pan Glass, with Argon	4'-5 3/4"	SEE SPEC SHEET
W05	E	3'-5"	1'-5"	Pella Windows & Doors	Proline 4717	Proline Clad Wood - Awning Vent	Pinewood Inside/Alum Clad Outside	Black				SunDefense Low-E Insulating Double Pan Glass, with Argon	6'-9 1/2"	SEE SPEC SHEET
W06	F	4'-5"	2'-1"	Pella Windows & Doors	Proline 5325	Proline Clad Wood - Awning Vent	Pinewood Inside/Alum Clad Outside	Black				SunDefense Low-E Insulating Double Pan Glass, with Argon	5'-5 1/2"	SEE SPEC SHEET
W07	F	2'-5"	2'-11"	Pella Windows & Doors	Proline 2935	Proline Clad Wood - Casement Vent	Pinewood Inside/Alum Clad Outside	Black				SunDefense Low-E Insulating Double Pan Glass, with Argon	5'-5 1/2"	SEE SPEC SHEET



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**INTERIOR DESIGN
SCHEDULES**

A-602

ROOM FINISH SCHEDULE											
ROOM NO	ROOM NAME	FLOOR		BASE		WALL		CEILING		COMMENTS	
		MATERIAL	FINISH / COLOR	MATERIAL	FINISH / COLOR	MATERIAL	FINISH / COLOR	MATERIAL	FINISH / COLOR		
100	FLEX ROOM	3/4" HARDWOOD FLOORING	TBD	RECESSED WOOD BASE	HIGH GLOSS / WHITE	PAINT	EGGSHELL - TBC	PAINT	FLAT - DECORATORS WHITE		
101	LIVING / DINING	3/4" HARDWOOD FLOORING	TBD	RECESSED WOOD BASE	HIGH GLOSS / WHITE	PAINT	EGGSHELL - TBC	PAINT	FLAT - DECORATORS WHITE		
102	KITCHEN	3/4" HARDWOOD FLOORING	TBD	RECESSED WOOD BASE	HIGH GLOSS / WHITE	PAINT	EGGSHELL - TBC	PAINT	FLAT - DECORATORS WHITE	BACKSPLASH - 1" X 1" RECYCLED GLASS TILES-SKY GLOSS / COUNTERTOP - CAESARSTONE BLIZZARD 2141	
103	HALLWAY	3/4" HARDWOOD FLOORING	TBD	RECESSED WOOD	HIGH GLOSS / WHITE	PAINT	EGGSHELL - TBC	PAINT	FLAT - DECORATORS WHITE		
104	LAUNDRY ROOM	3/4" HARDWOOD FLOORING	TBD	RECESSED WOOD BASE	HIGH GLOSS / WHITE	PAINT	EGGSHELL - TBC	PAINT	FLAT - DECORATORS WHITE		
105	BATHROOM	13"X13" PORCELAIN FLOOR TILES	UNGLAZED / SILK BLANCO EXPO	8" X 13" PORCELAIN TILE	GLAZED / SILK BLANCO EXPO	PAINT	EGGSHELL - TBC	PAINT	FLAT - DECORATORS WHITE	SHOWER WALLS - 8" X 13" PORCELAIN TILES / COUNTERTOP - CAESARSTONE BLIZZARD 2141	
106	MASTER BEDROOM	3/4" HARDWOOD FLOORING	TBD	5/8" X 4-3/8" WOOD	HIGH GLOSS / WHITE	PAINT	EGGSHELL - TBC	PAINT	FLAT - DECORATORS WHITE		
107	MECHANICAL ROOM	VCT	GREY	4" APPLIED VINYL BASE	GREY	PAINT	EGGSHELL - TBC	PAINT	FLAT - DECORATORS WHITE		
108	LIVING / DINING	3/4" HARDWOOD FLOORING	TBD	RECESSED WOOD BASE	HIGH GLOSS / WHITE	PAINT	EGGSHELL - TBC	PAINT	FLAT - DECORATORS WHITE		

EQUIPMENT SCHEDULE						
DESCRIPTION	MANUFACTURER	MODEL	DIMENSIONS (WxHxD)	FINISH	QUANTITY	COMMENTS
REFRIGERATOR	LG	LTC19340	30"x65"x32"	STAINLESS STEEL	1	
DISHWASHER	LG	LDF8072ST	27"x38.75"x29.75"	STAINLESS STEEL	1	
MICROWAVE	LG	LMV1683	16.75"x11.25"x18"	STAINLESS STEEL	1	
OVEN	LG	LWS3010ST	29.75"x29.25"x24.5"	STAINLESS STEEL	1	
INDUCTION COOKTOP	LG	LCE30845	30.25"x2.25"x21.5"	STAINLESS STEEL	1	
RANGE HOOD	KITCHEN AID	KXI2536YSS	SEE SPECIFICATIONS	STAINLESS STEEL	1	
WASHER	LG	WM2655HVA	27"x38.75"x29.75"	STAINLESS STEEL	1	
DRYER	LG	DLEX2655V	27"x38.75"x29.75"	STAINLESS STEEL	1	
CEILING FAN	BIG ASS FANS	S3150-S1	SEE SPECIFICATIONS	WHITE / BAMBOO / CARAMEL	2	

MILLWORK SCHEDULE						
MARK	DESCRIPTION	LOCATIONS	QUANTITY	MATERIALS / FINISHES	FABRICATOR	COMMENTS
MW-100	FLEX WALL UNIT	LIVING / DINING	1	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-101	MOBILE SEATING	LIVING / DINING	4	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-102	MOBILE SEATING 2	LIVING / DINING	2	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-103	COAT CLOSET	LIVING / DINING	1	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-104	HANGING CUBBY	LIVING / DINING	4	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-105	HANGING CUBBY 2	LIVING / DINING	1	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-106	HANGING SHELF	LIVING / DINING	3	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-200	MURPHY BED	FLEX ROOM	1	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-201	SHELVING UNIT	FLEX ROOM	1	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-202	WARDROBE	FLEX ROOM	1	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-300	KITCHEN CABINETS	KITCHEN	1	WOOD VENEER / PLASTIC LAMINATE / CAESARSTONE	EASTERN MILLWORK INC.	
MW-301	KITCHEN ISLAND	KITCHEN	1	WOOD VENEER / PLASTIC LAMINATE / CAESARSTONE	EASTERN MILLWORK INC.	
MW-400	VANITY	BATHROOM	1	WOOD VENEER / PLASTIC LAMINATE / CAESARSTONE	EASTERN MILLWORK INC.	
MW-500	WARDROBE	MASTER BEDROOM	2	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-501	BED	MASTER BEDROOM	1	WOOD VENEER / PLASTIC LAMINATE	EASTERN MILLWORK INC.	
MW-800	EXTERIOR CABINTRY	EXTERIOR	1	PLASTIC LAMINATE WITH PHENOLIC CORE / CAESARSTONE	EASTERN MILLWORK INC.	



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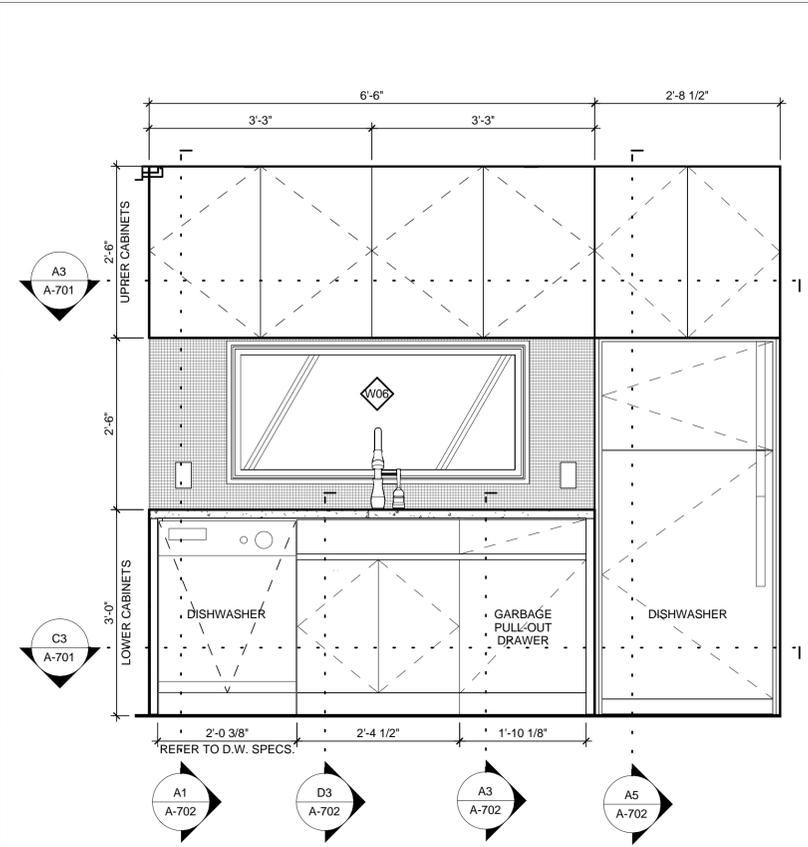
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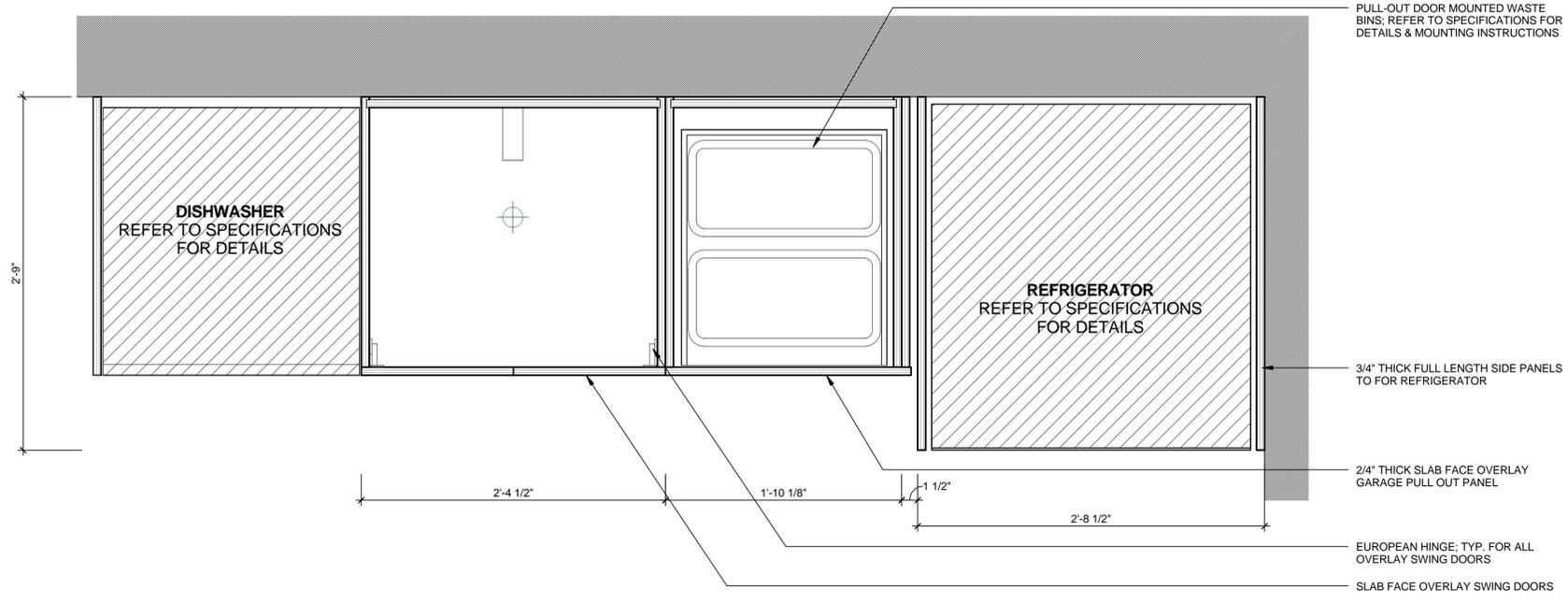
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**MILLWORK DETAILS
KITCHEN CABINETRY**

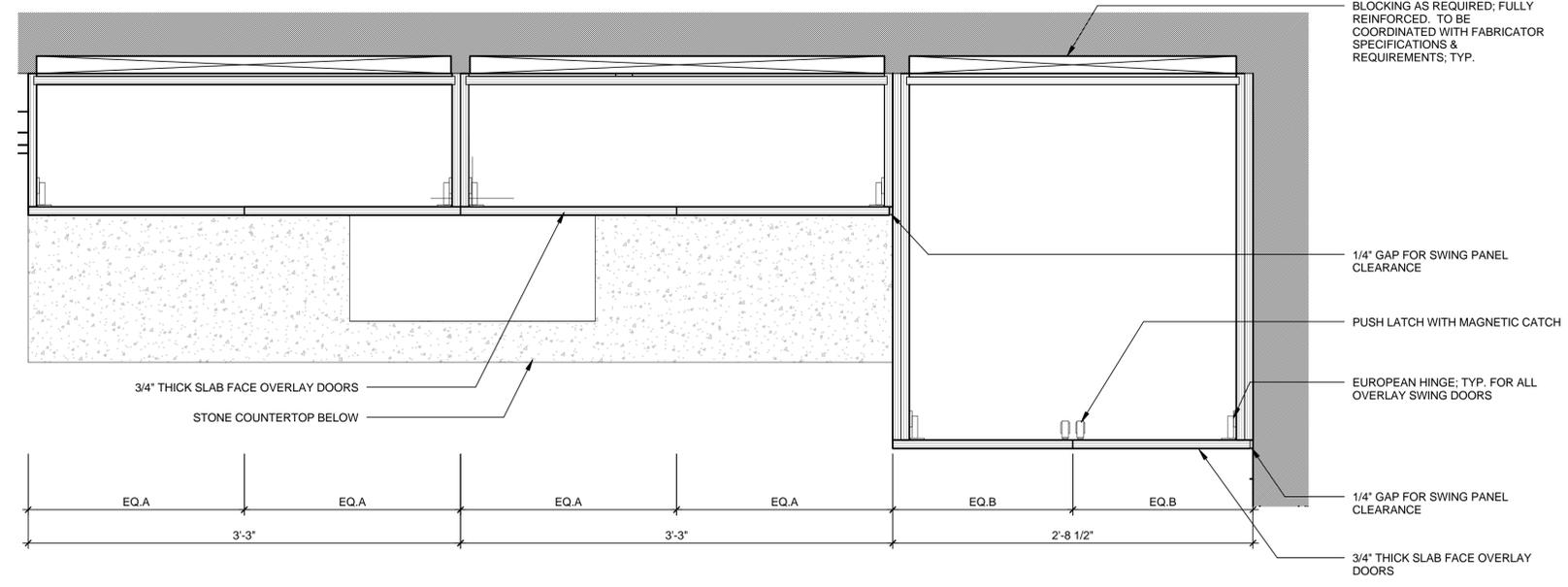
A-701



C1 KITCHEN CABINETRY - ELEVATION
3/4" = 1'-0"



C3 KITCHEN CABINETRY - LOWER CABINET PLAN
1 1/2" = 1'-0"



A3 KITCHEN CABINETRY - UPPER CABINET PLAN
1 1/2" = 1'-0"

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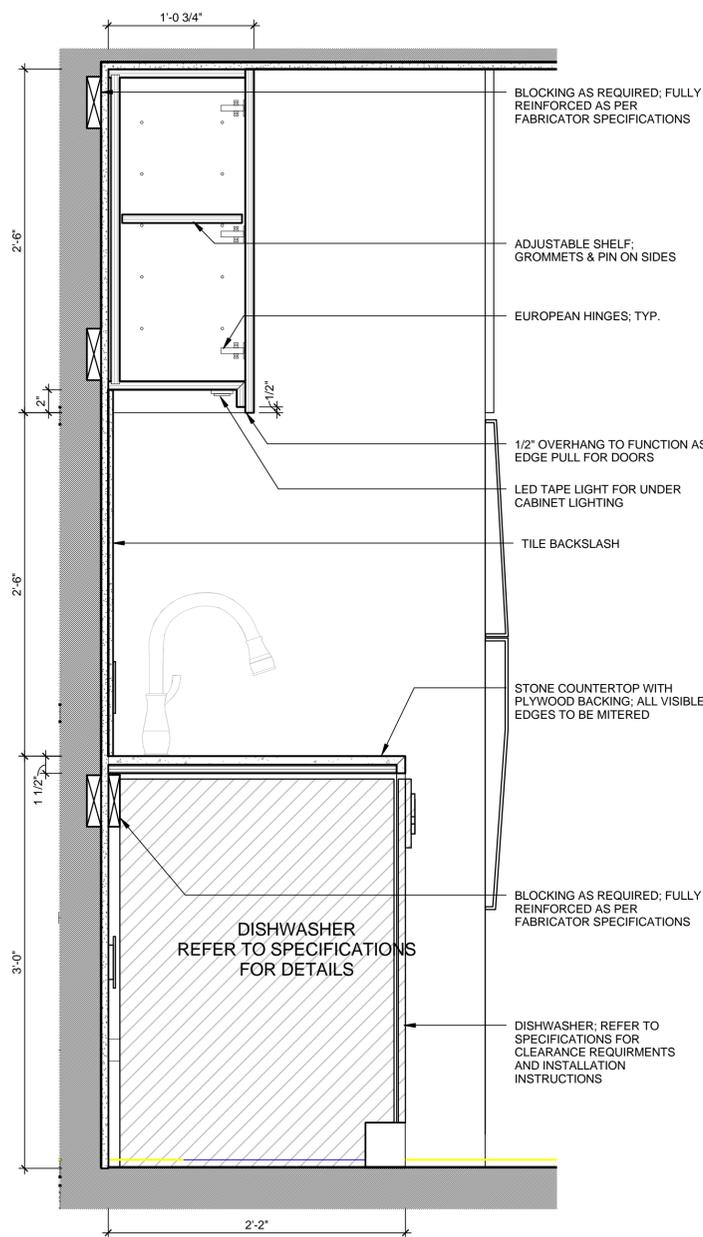
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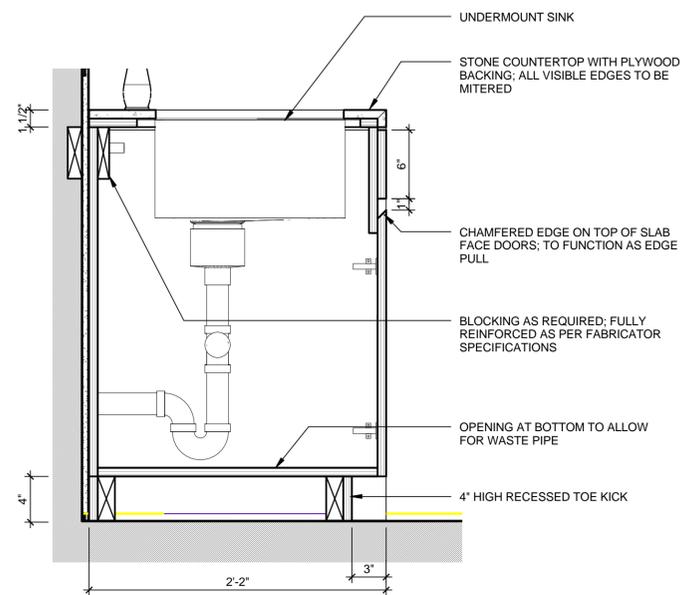
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**MILLWORK DETAILS
KITCHEN CABINETY**

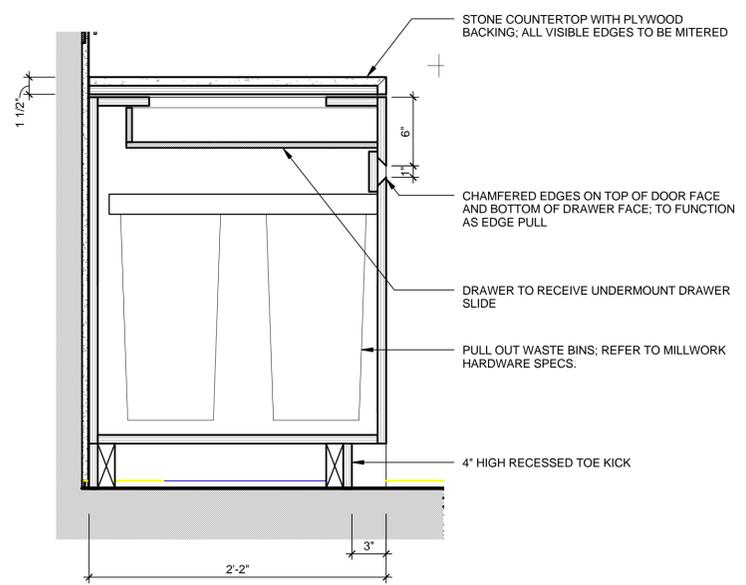
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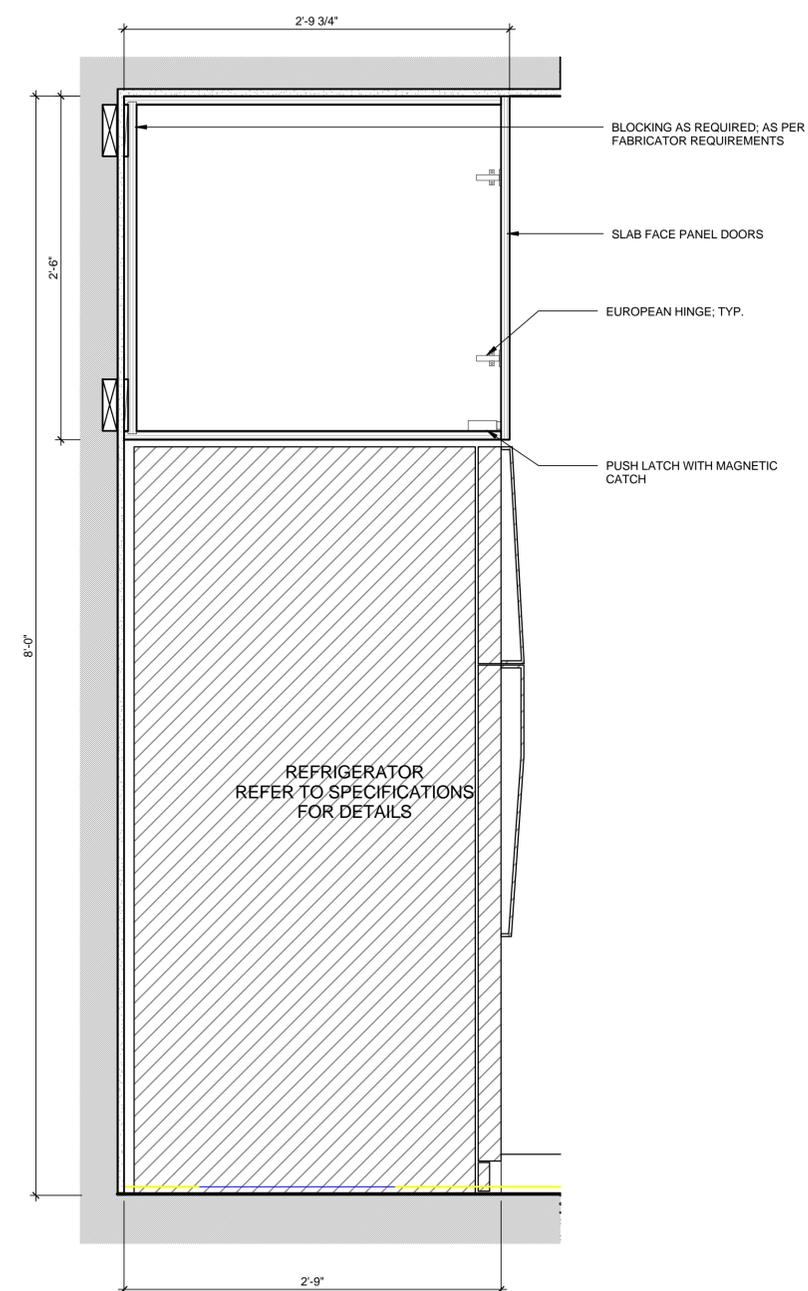
A1 KITCHEN CABINETY - DETAIL SECTION
1 1/2" = 1'-0"



D3 KITCHEN CABINETY - LOWER CABINET SINK BASE
1 1/2" = 1'-0"

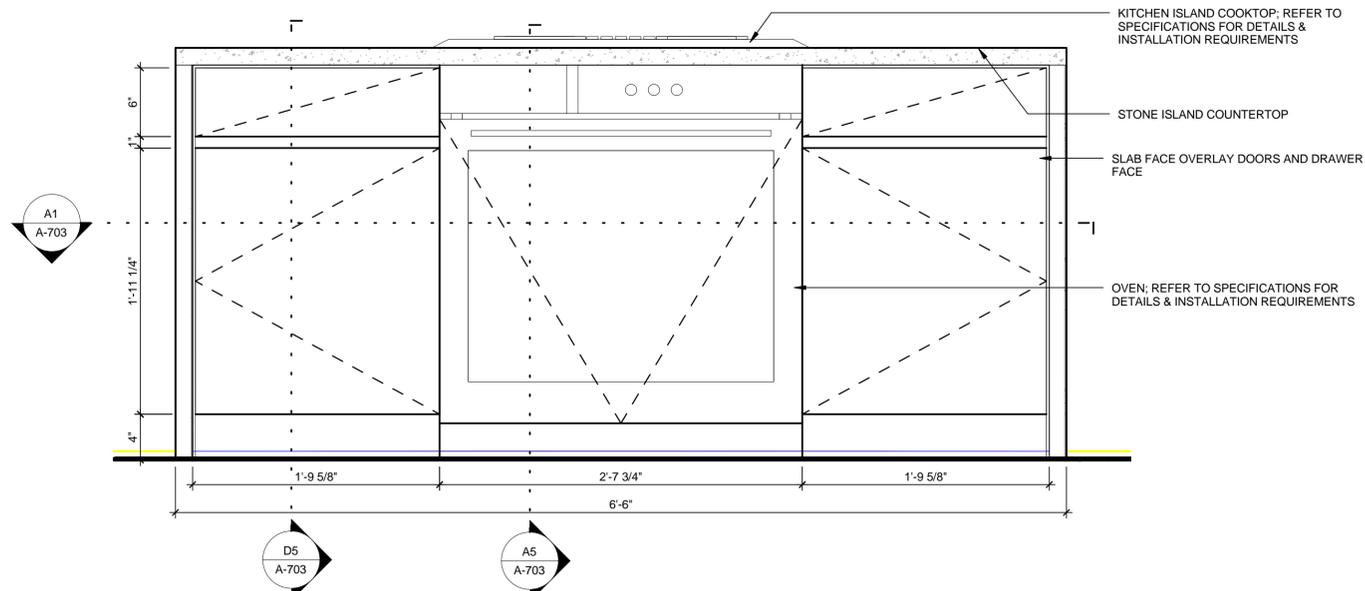


A3 KITCHEN CABINETY - LOWER CABINET DETAIL
1 1/2" = 1'-0"

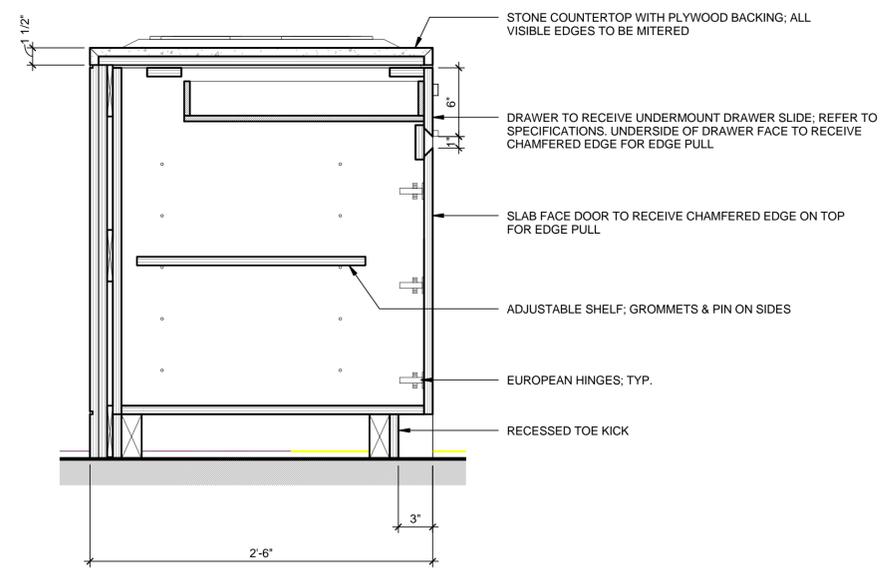


A5 KITCHEN CABINETY - REFRIGERATOR SECTION
1 1/2" = 1'-0"

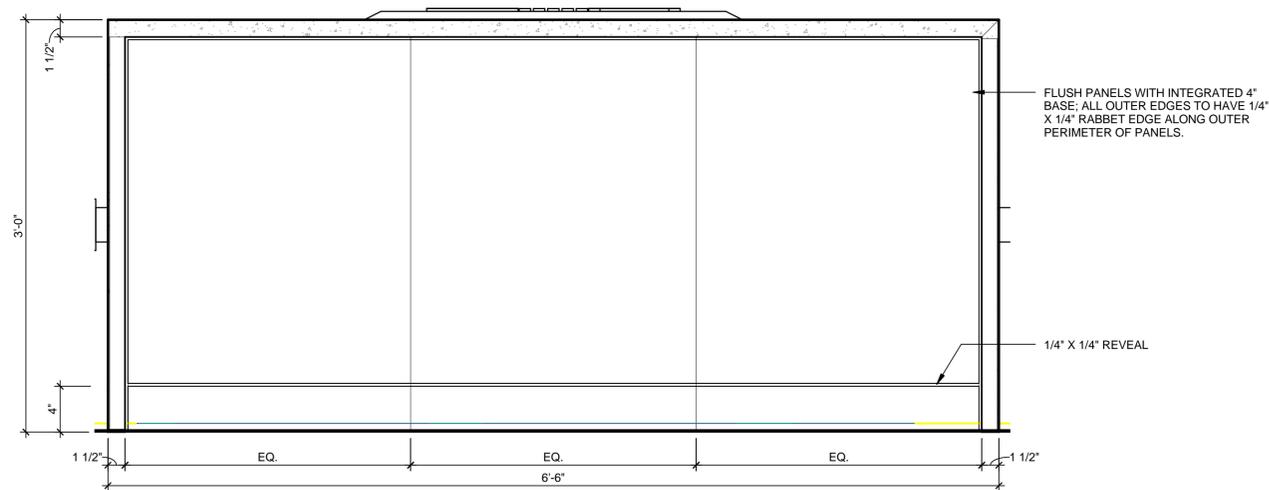
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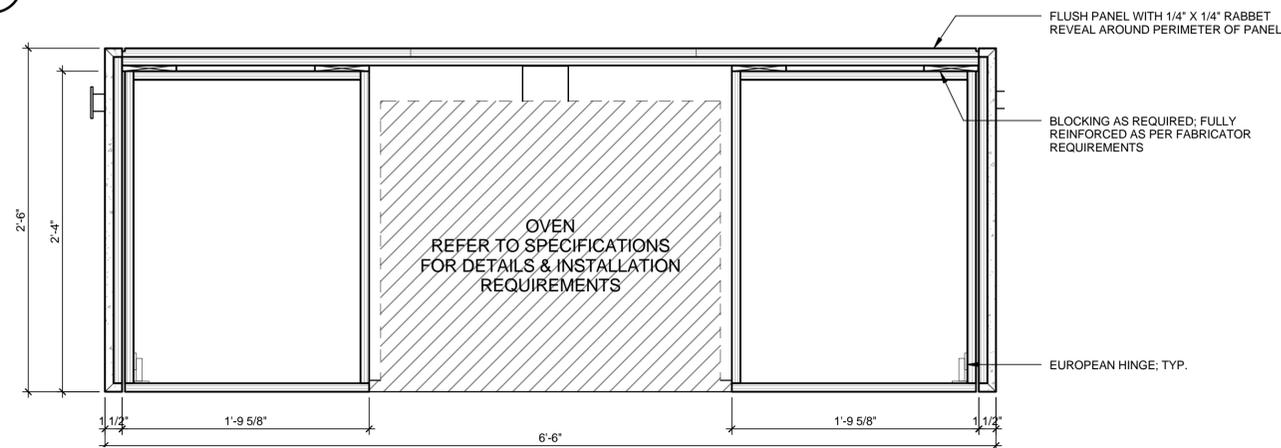
D1 KITCHEN ISLAND ELEVATION
1 1/2" = 1'-0"



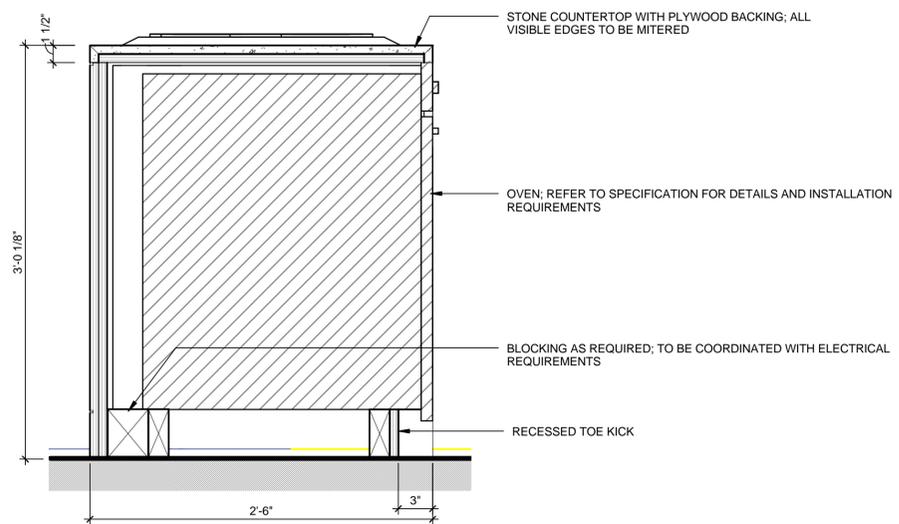
D5 KITCHEN ISLAND - DRAWER SECTION
1 1/2" = 1'-0"



B1 KITCHEN ISLAND - REAR ELEVATION
1 1/2" = 1'-0"



A1 KITCHEN ISLAND - DETAIL PLAN
1 1/2" = 1'-0"



A5 KITCHEN ISLAND - OVEN SECTION
1 1/2" = 1'-0"



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**MILLWORK DETAILS
KITCHEN ISLAND**

A-703



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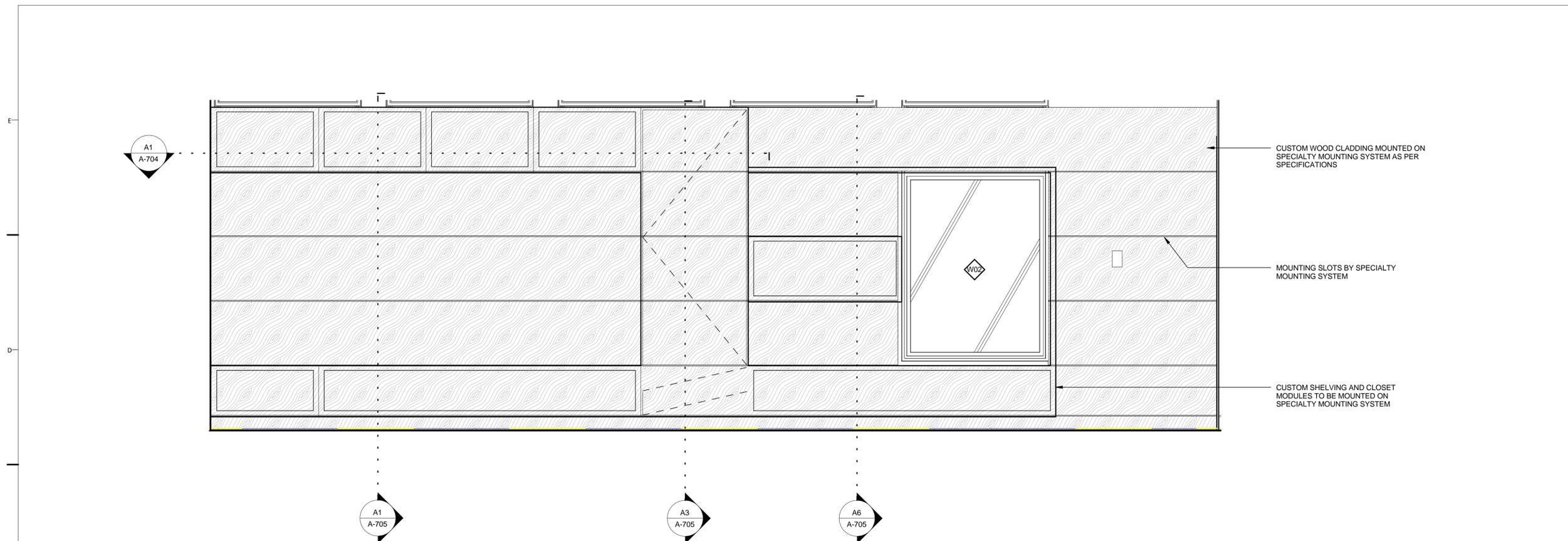


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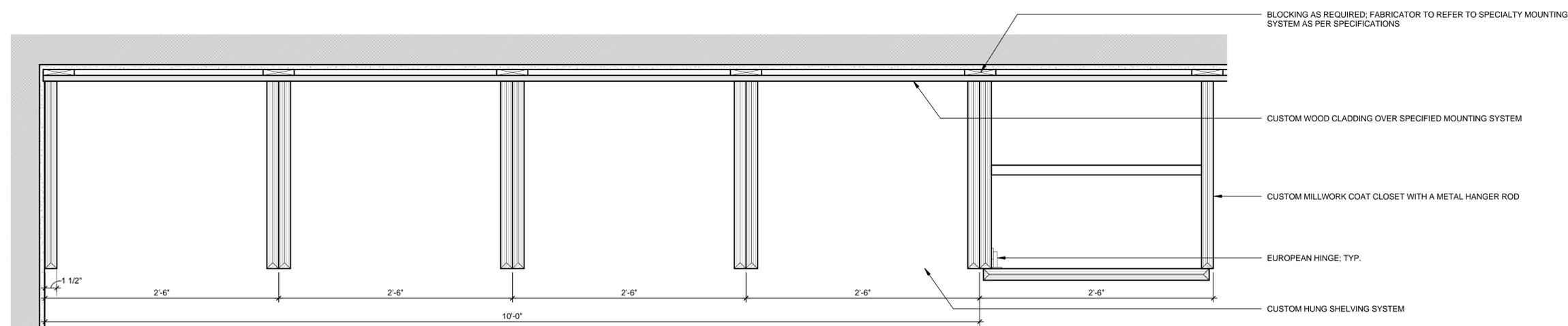
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**MILLWORK DETAILS
LIVING ROOM
MILLWORK**

A-704



C1 LIVING ROOM - ELEVATION
3/4" = 1'-0"



A1 LIVING ROOM - DETAIL PLAN
1 1/2" = 1'-0"

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1 2 3 4 5 6 7



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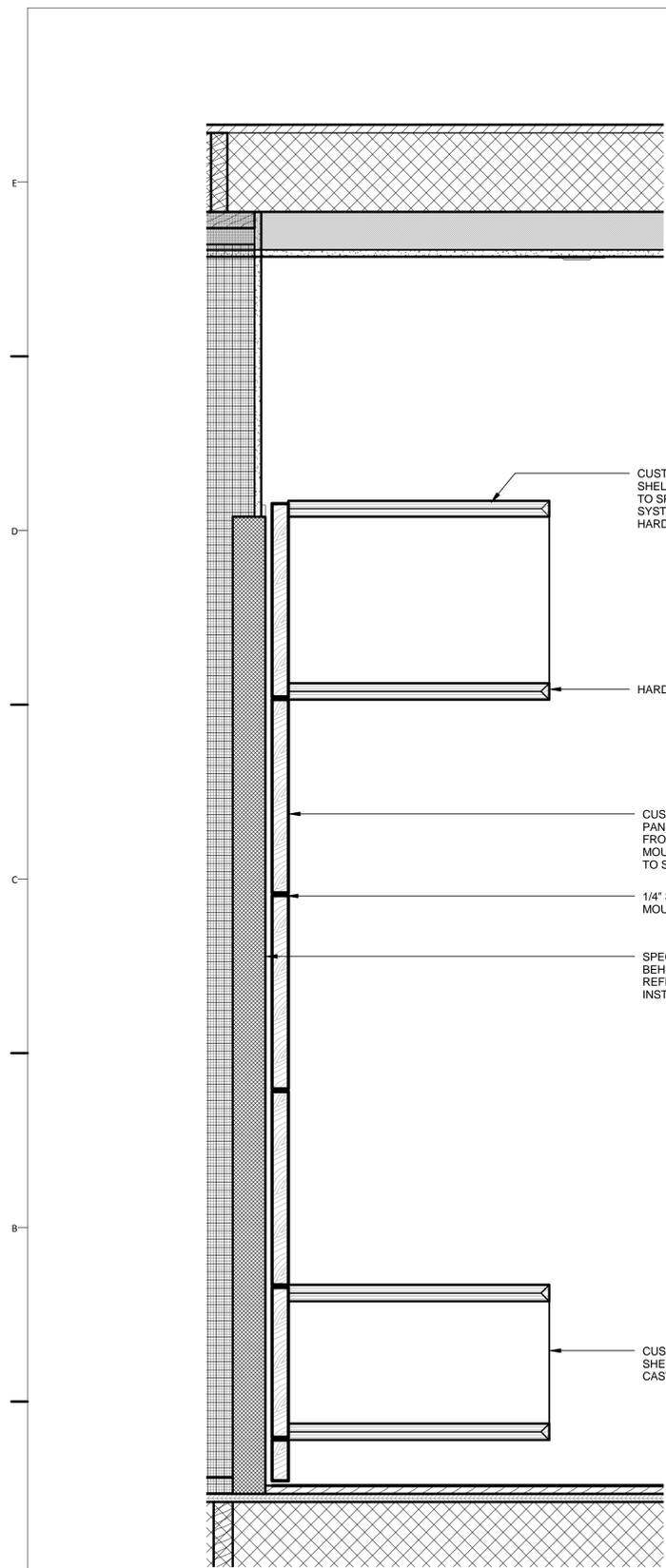
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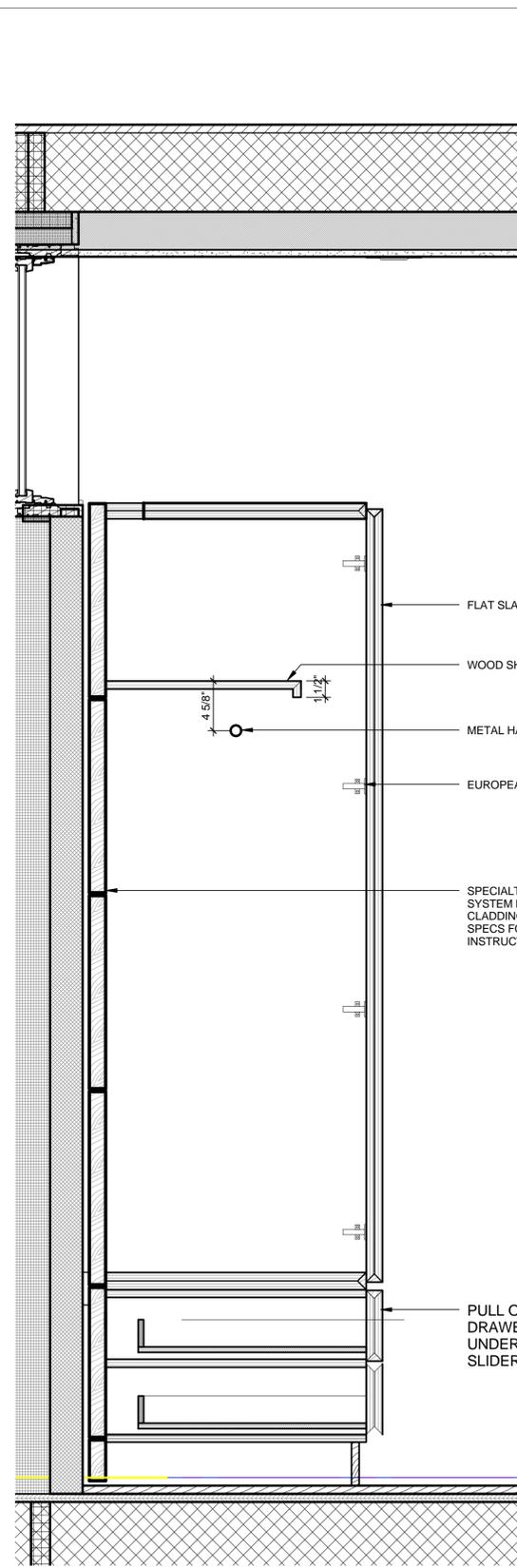
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**MILLWORK DETAILS
LIVING ROOM
MILLWORK**

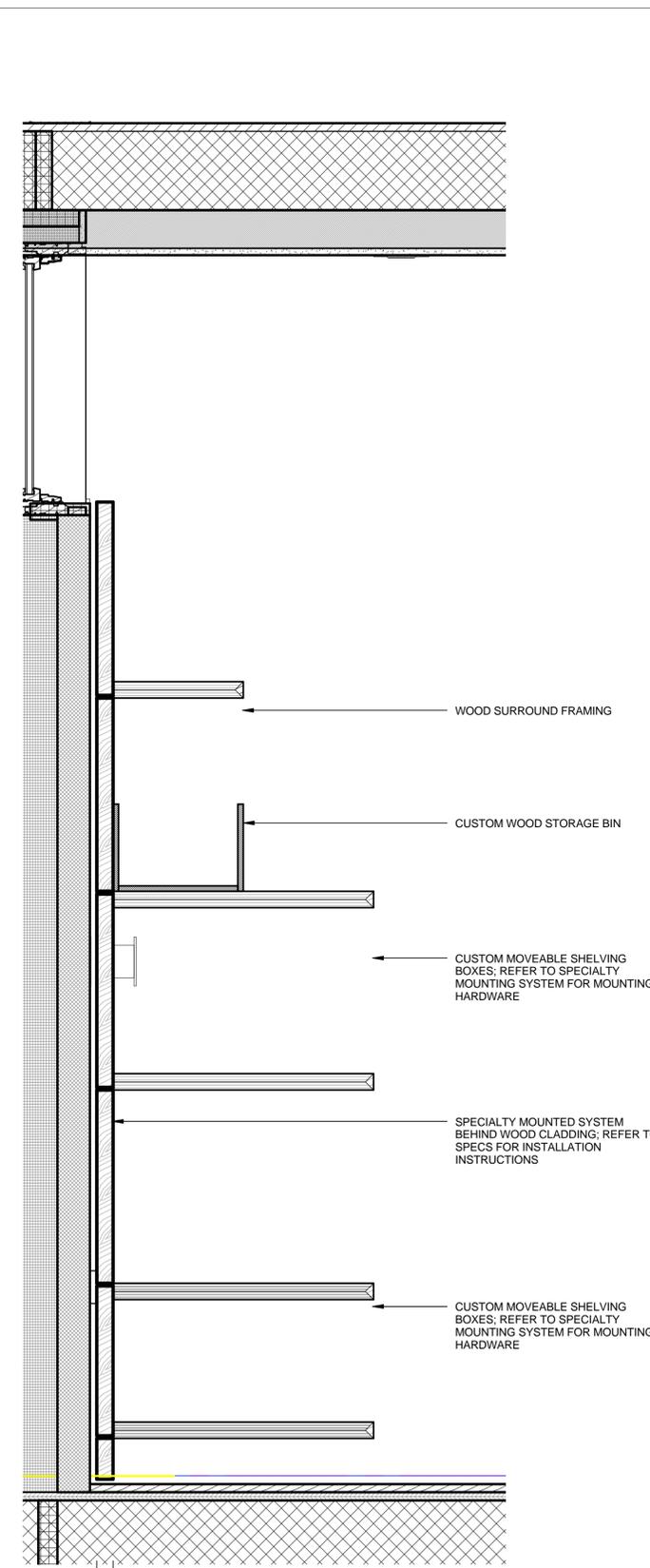
A-705



A1 LIVING ROOM MILLWORK - SECTION 1
1 1/2" = 1'-0"



A3 LIVING ROOM MILLWORK - SECTION CLOSET
1 1/2" = 1'-0"



A6 LIVING ROOM MILLWORK - SECTION 2
1 1/2" = 1'-0"

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1 2 3 4 5 6 7



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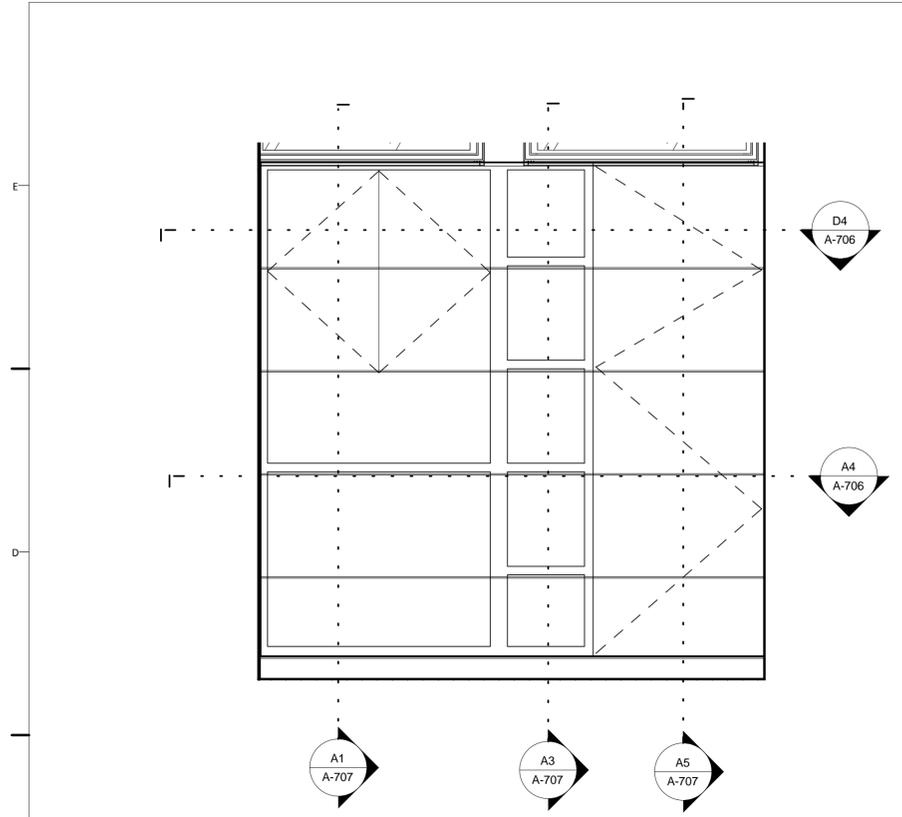


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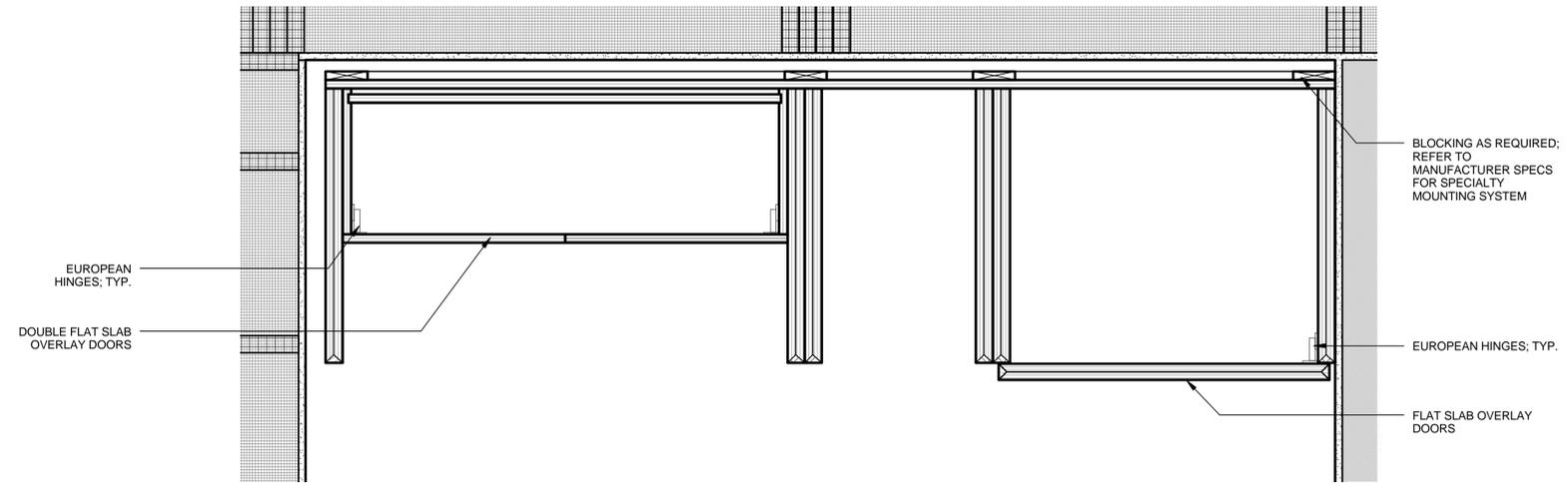
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MILLWORK DETAILS
FLEX ROOM MILLWORK

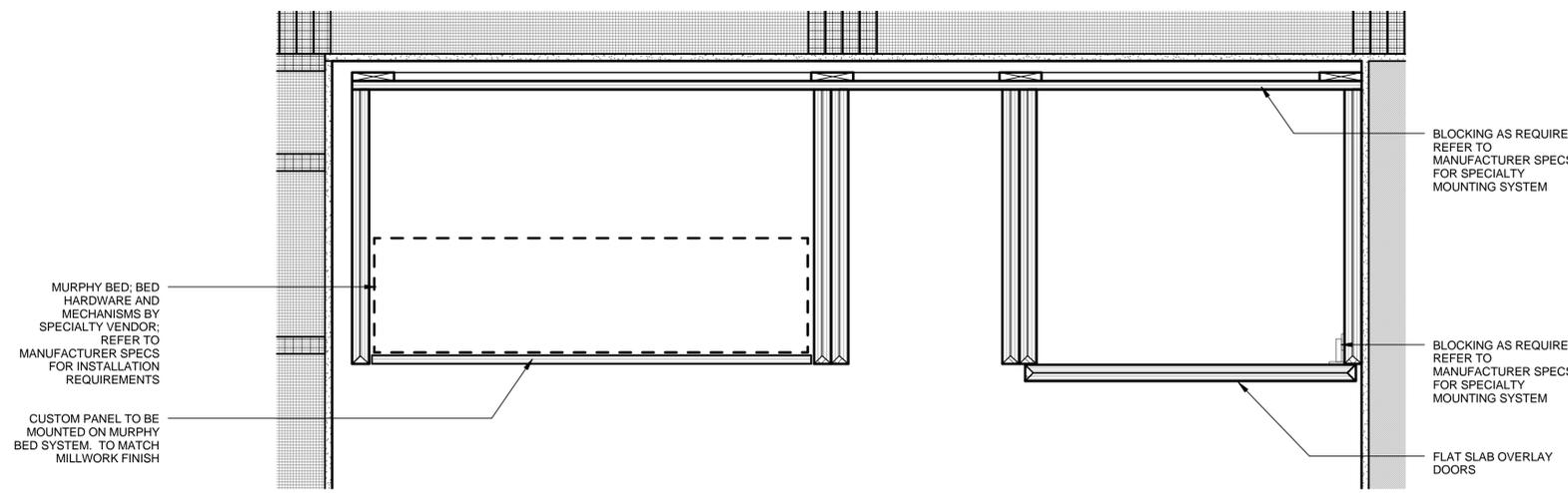
A-706



D1 FLEX ROOM - ELEVATION
3/4" = 1'-0"

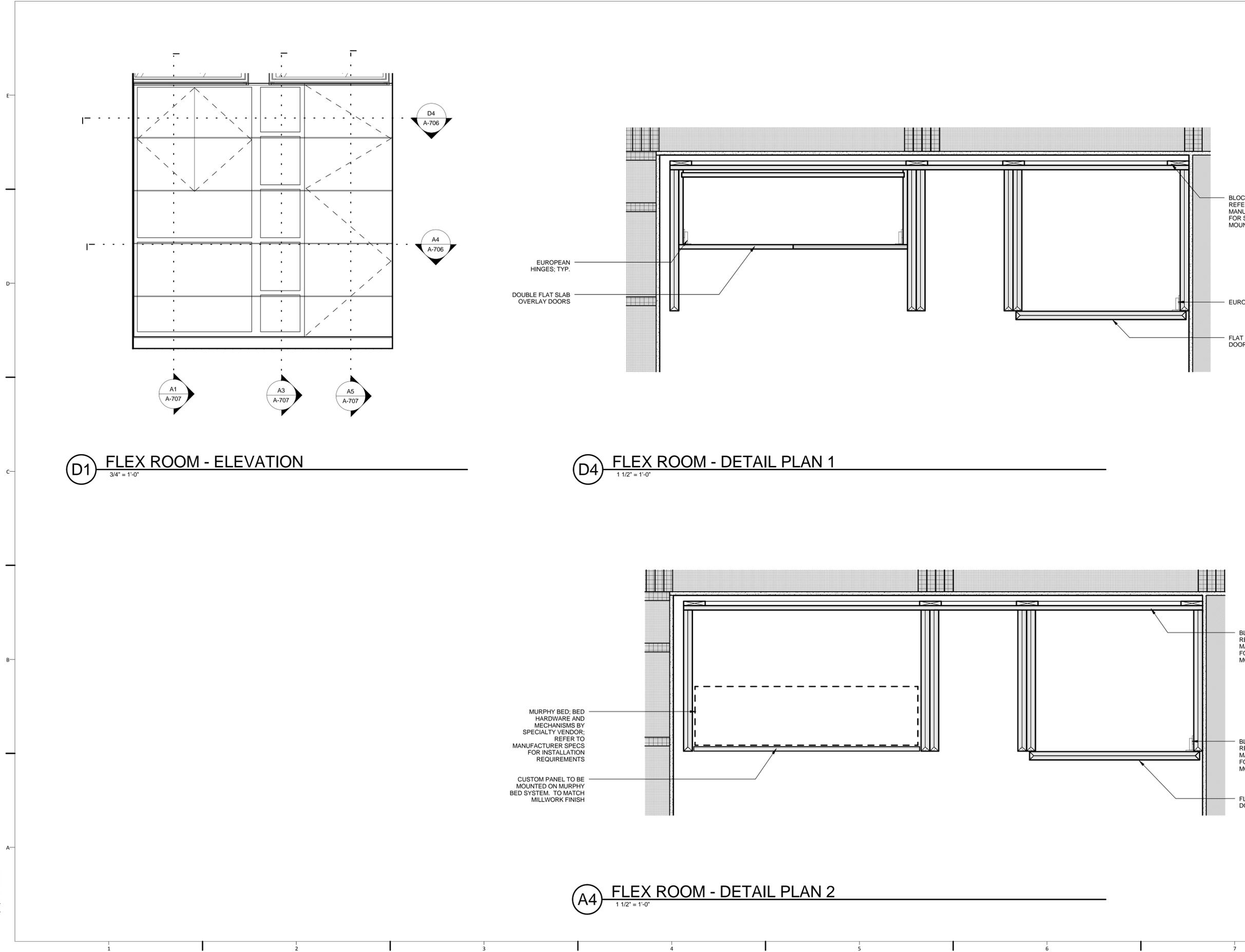


D4 FLEX ROOM - DETAIL PLAN 1
1 1/2" = 1'-0"



A4 FLEX ROOM - DETAIL PLAN 2
1 1/2" = 1'-0"

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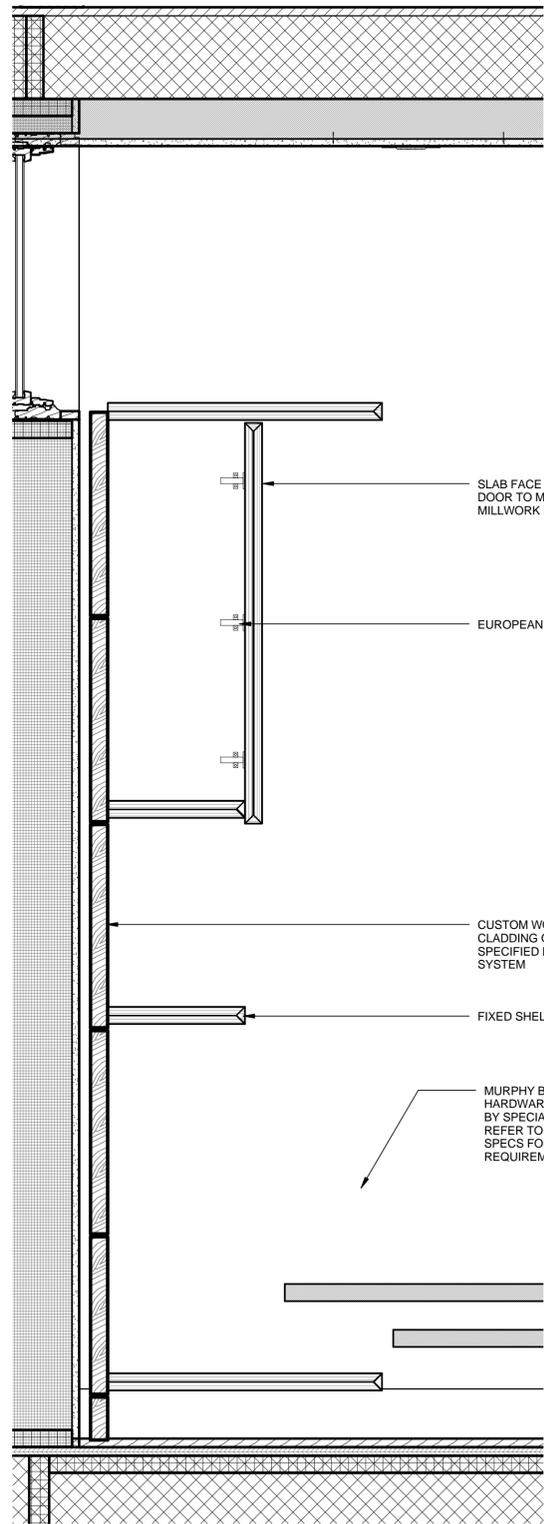
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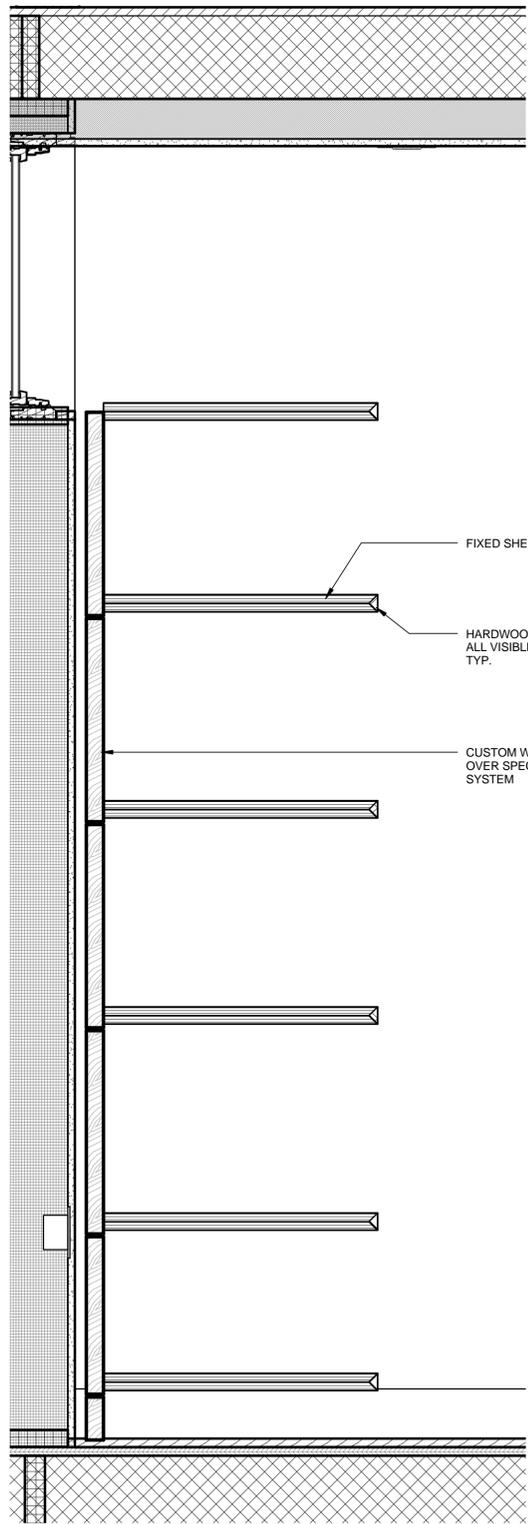
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FLEX ROOM MILLWORK**

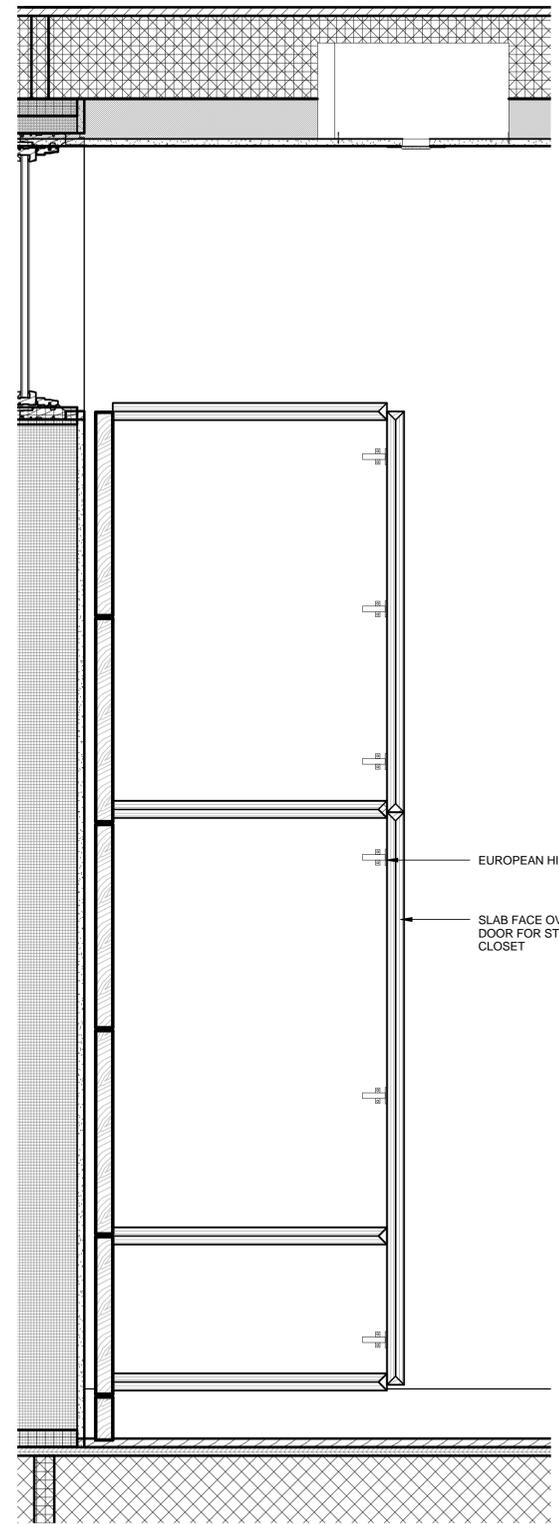
A-707



A1 FLEX ROOM - MURPHY BED SECTION
1 1/2" = 1'-0"



A3 FLEX ROOM - SHELVING SECTION
1 1/2" = 1'-0"



A5 FLEX ROOM - CLOSET SECTION
1 1/2" = 1'-0"

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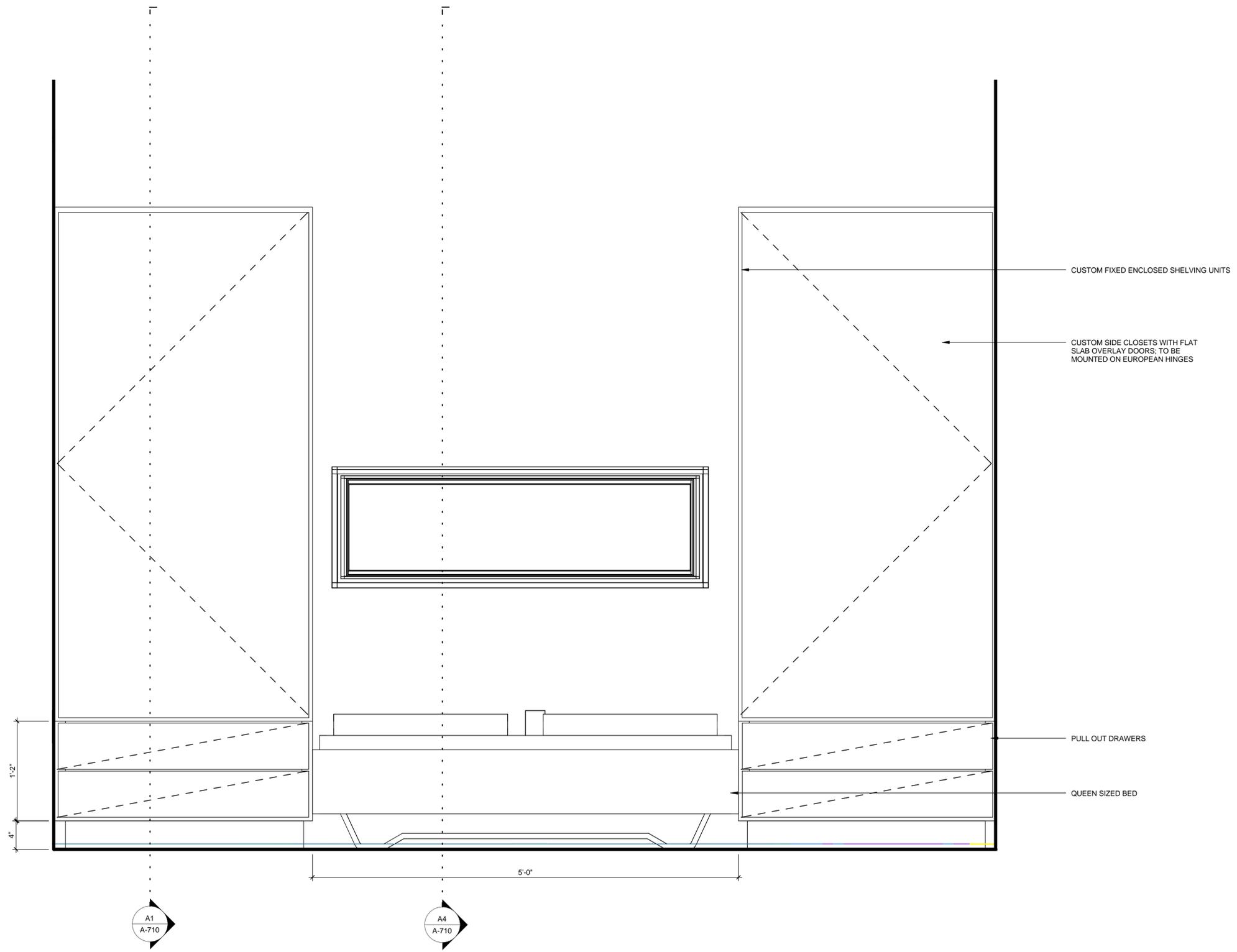
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**MILLWORK DETAILS
MASTER BEDROOM
MILLWORK**

A-709



A1 MASTER BEDROOM MILLWORK - ELEVATION
1 1/2" = 1'-0"

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1 2 3 4 5 6 7



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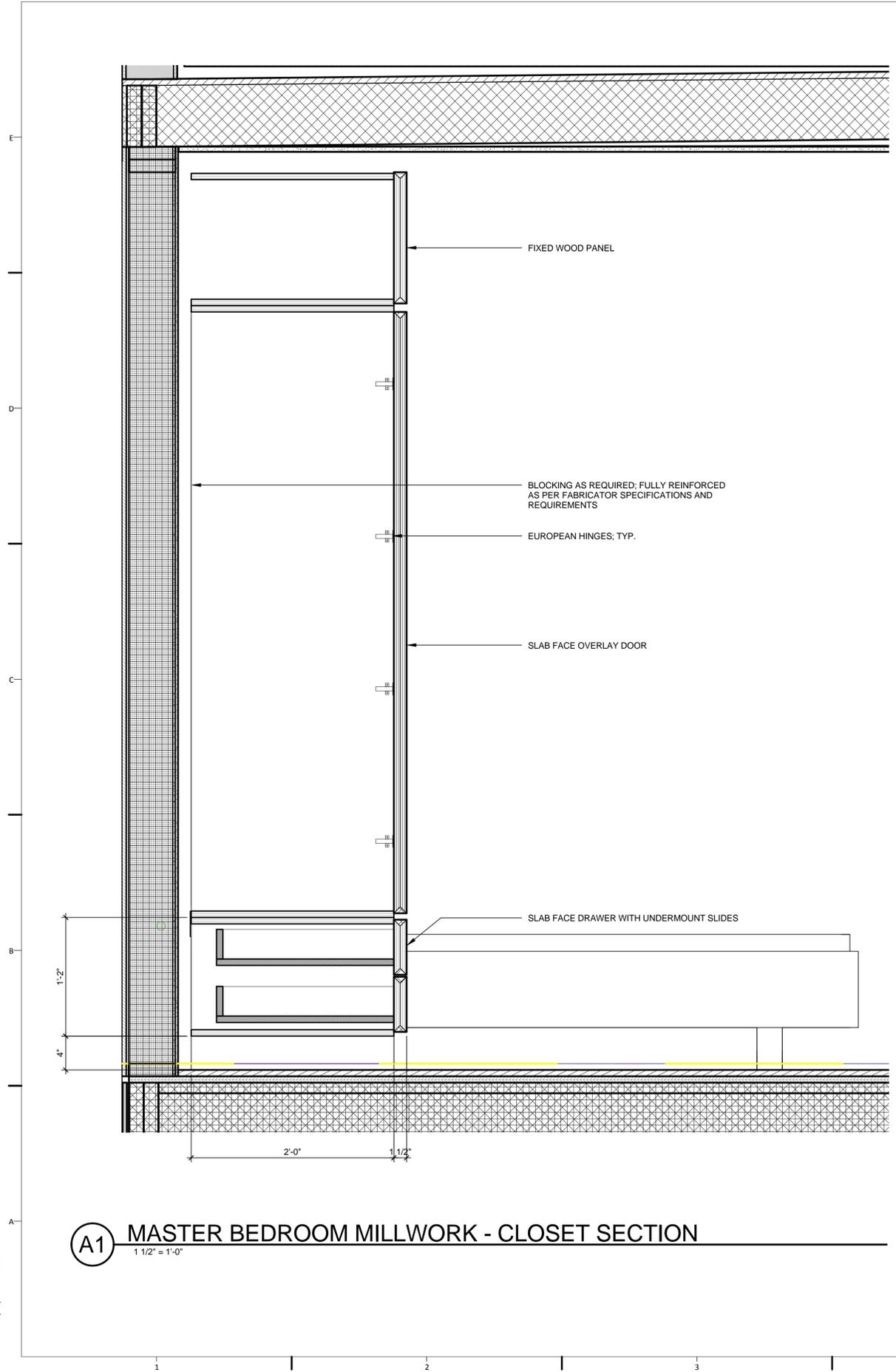
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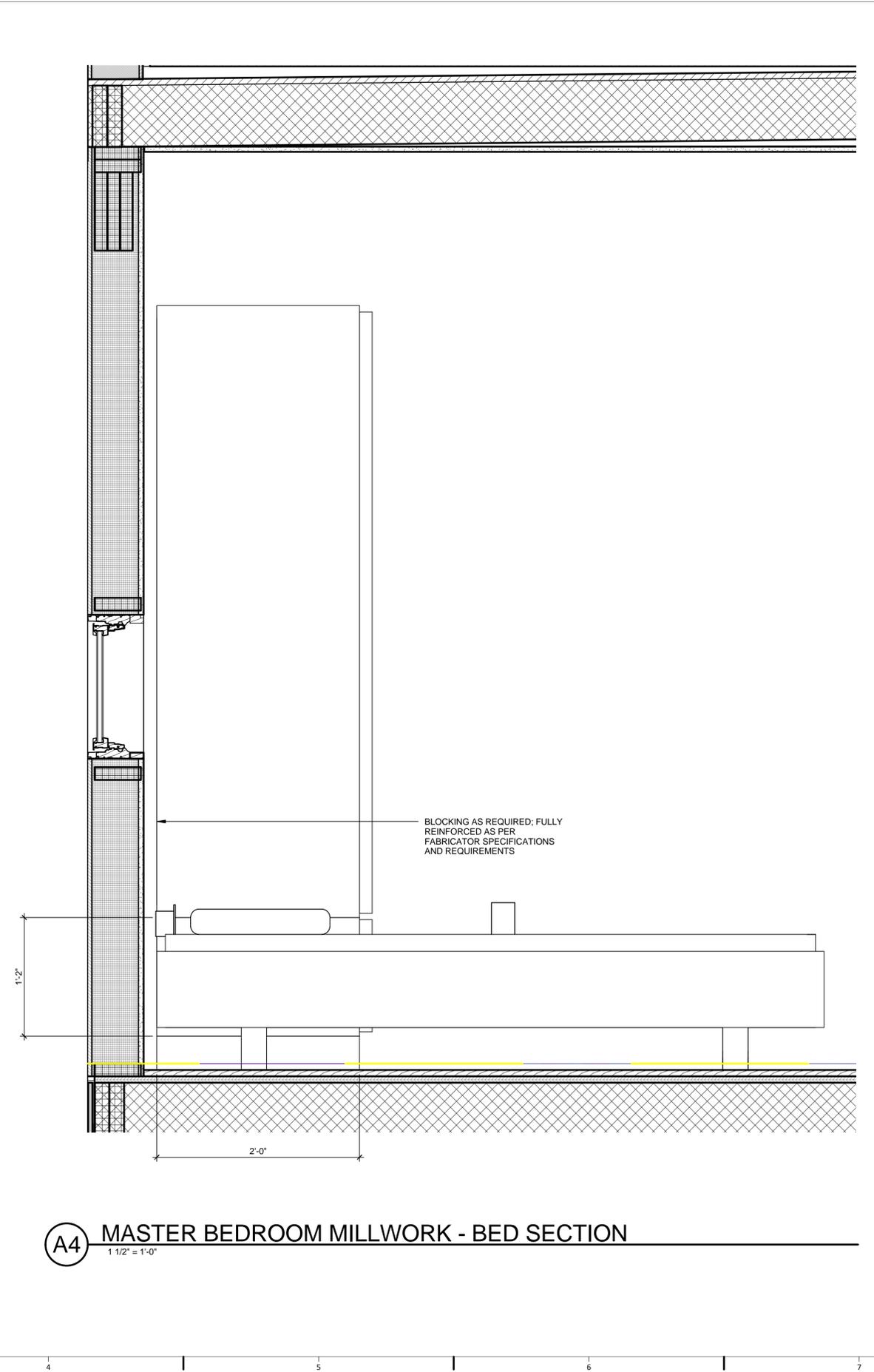
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**MILLWORK DETAILS
MASTER BEDROOM
MILLWORK**

A-710



A1 MASTER BEDROOM MILLWORK - CLOSET SECTION
1 1/2" = 1'-0"



A4 MASTER BEDROOM MILLWORK - BED SECTION
1 1/2" = 1'-0"

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**FIRE PROTECTION
NOTES**

F-001

GENERAL NOTES:

ACCORDING TO R313.1 OF IRC 2012, THE HOUSE SHALL HAVE AN AUTOMATIC FIRE SUPPRESSION SYSTEM DESIGNED AND INSTALLED ACCORDING TO P2904.

P2904.1 GENERAL. WHERE INSTALLED, RESIDENTIAL FIRE SPRINKLER SYSTEMS, OR PORTIONS THEREOF, SHALL BE IN ACCORDANCE WITH NFPA 13D OR SECTION P2904, WHICH SHALL BE CONSIDERED EQUIVALENT TO NFPA 13D. SECTION P2904 SHALL APPLY TO STAND-ALONE AND MULTIPURPOSE WET-PIPE SPRINKLER SYSTEMS THAT DO NOT INCLUDE THE USE OF ANTIFREEZE. A MULTIPURPOSE FIRE SPRINKLER SYSTEM SHALL SUPPLY DOMESTIC WATER TO BOTH FIRE SPRINKLERS AND PLUMBING FIXTURES. A STAND-ALONE SPRINKLER SYSTEM SHALL BE SEPARATE AND INDEPENDENT FROM THE WATER DISTRIBUTION SYSTEM. A BACKFLOW PREVENTER SHALL NOT BE REQUIRED TO SEPARATE A STAND-ALONE SPRINKLER SYSTEM FROM THE WATER DISTRIBUTION SYSTEM.

P2904.1.1 REQUIRED SPRINKLER LOCATIONS. SPRINKLERS SHALL BE INSTALLED TO PROTECT ALL AREAS OF A DWELLING UNIT. EXCEPTIONS:

- CLOTHES CLOSETS, LINEN CLOSETS AND PANTRIES NOT EXCEEDING 24 SQUARE FEET (2.2 M2) IN AREA, WITH THE FLOOR SMALLEST DIMENSION NOT GREATER THAN 3 FEET (915 MM) AND HAVING WALL AND CEILING SURFACES OF GYPSUM BOARD.
- BATHROOMS NOT MORE THAN 55 SQUARE FEET (5.1 M2) IN AREA.

P2904.3 SPRINKLER PIPING SYSTEM. SPRINKLER PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE REQUIREMENTS FOR COLD WATER DISTRIBUTION PIPING. SPRINKLER PIPING SHALL COMPLY WITH ALL REQUIREMENTS FOR COLD WATER DISTRIBUTION PIPING. FOR MULTIPURPOSE PIPING SYSTEMS, THE SPRINKLER PIPING SHALL CONNECT TO AND BE A PART OF THE COLD WATER DISTRIBUTION PIPING SYSTEM.

P2904.2.4 SPRINKLER COVERAGE AREAS WERE BASED ON MANUFACTURERS INSTALLATION INSTRUCTIONS.

P2904.5 THE DEDICATED FIRE SUPPRESSION WATER SUPPLY (260GAL), HAS SUFFICIENT CAPACITY TO PROVIDE THE REQUIRED DESIGN FLOW RATE FOR 10 MINUTES.

P2904.6 FIRE SUPPRESSION WATER DISTRIBUTION PIPES WERE SIZED BY DETERMINING THE AVAILABLE PRESSURE TO OFFSET FRICTION LOSS IN PIPING AND IDENTIFYING A PIPING MATERIAL, DIAMETER AND LENGTH USING THE EQUATION IN SECTION P2904.6.2.1 AND THE PROCEDURE IN SECTION P2904.6.2 OF THE 2009 IRC

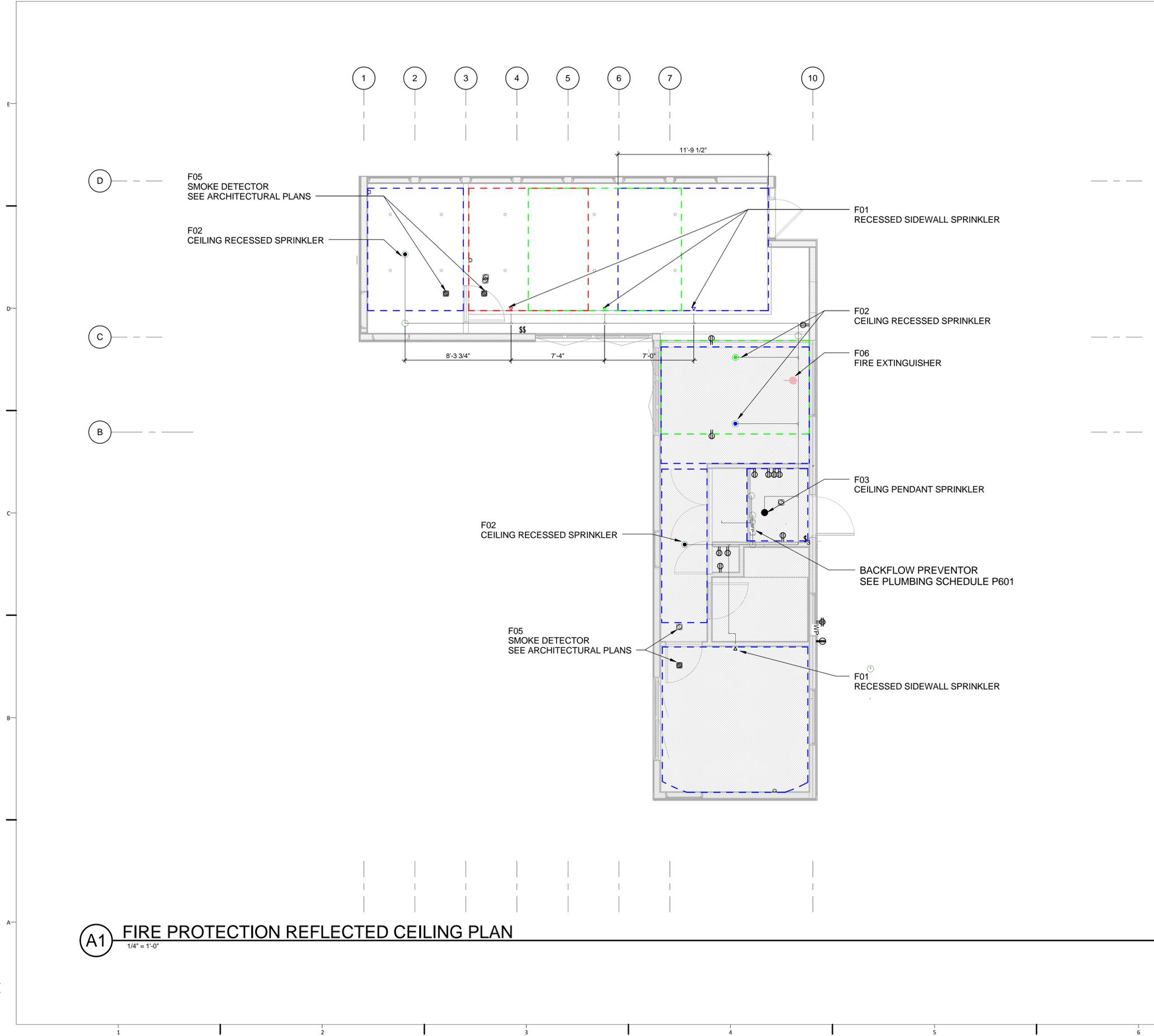
FIRE SUPPRESSION WATER DISTRIBUTION PIPING IS 1" CPVC UNLESS OTHERWISE NOTED.

SMOKE DETECTIONS AND NOTIFICATION SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE TO R314.1, R314.3 & R314.4 OF THE IRC 2012.

R314.3 SMOKE ALARMS WILL BE TIED TOGETHER SO THAT WHEN ONE ALARM IS TRIGGERED ALL ALARMS WITHIN THE BUILDING WILL GO OFF.

R314.4 SMOKE ALARMS WILL BE POWERED PRIMARILY FROM THE BUILDING WIRING WITH BATTERIES AS BACKUPS.

FIRE EXTINGUISHERS HAVE A MINIMUM RATING OF 2A-10BC



- GENERAL SHEET NOTES
1. ALL SPRINKLERS HAVE COVER PLATES RATED FOR 135 DEG F (SEE F04).
 2. PIPING IS CPVC WITH A 3/4" TRUNK LINE GOING INTO 1/2" BRANCHES AT EACH HEAD (SEE F07).
 3. MINIMUM SPACING REQUIRED FOR SIDEWALL SPRINKLERS IS 7 FT.



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LEGEND

- - - SPRINKLER HEAD COVERAGE

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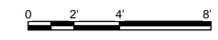
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FIRE DETECTION AND SUPPRESSION

F-101



A1 FIRE PROTECTION REFLECTED CEILING PLAN
1/4" = 1'-0"

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**FIRE PROTECTION
SCHEDULE**

F-601

Fire Protection Schedule								
Mark	Description	Manufacturer	Model	Nominal K-Factor	Unit Dimensions (in)			
					Width	Height	Depth	Diameter
F01	1/2" Residential Standard Coverage Concealed Sidewall Sprinkler	Viking	VK481	5.6	n/a	n/a	2.00	0.25
F02	1/2" Residential Concealed Ceiling Recessed Sprinkler	Viking	VK480	4.0	n/a	n/a	2.00	0.25
F03	1/2" Residential Standard Response Fusible Link Pendent Sprinkler	Viking	VK110	5.6	n/a	n/a	2.00	0.25
F04	Standard Sprinkler Cover Plate @ 135°F	Viking	16207MA/W	n/a	n/a	n/a	n/a	n/a
F05	CO and Smoke Alarm and Sensors	Kidde	KN-COSM-IB	n/a	5.25	n/a	1.50	n/a
F06	Residential Series Living Area UL rated 2-A: 10-B:C Fire Extinguisher	Kidde	FX210R	n/a	n/a	16.07	n/a	4.50
F07	Fire Suppression Piping	Blaze Master	n/a	n/a	n/a	n/a	n/a	n/a

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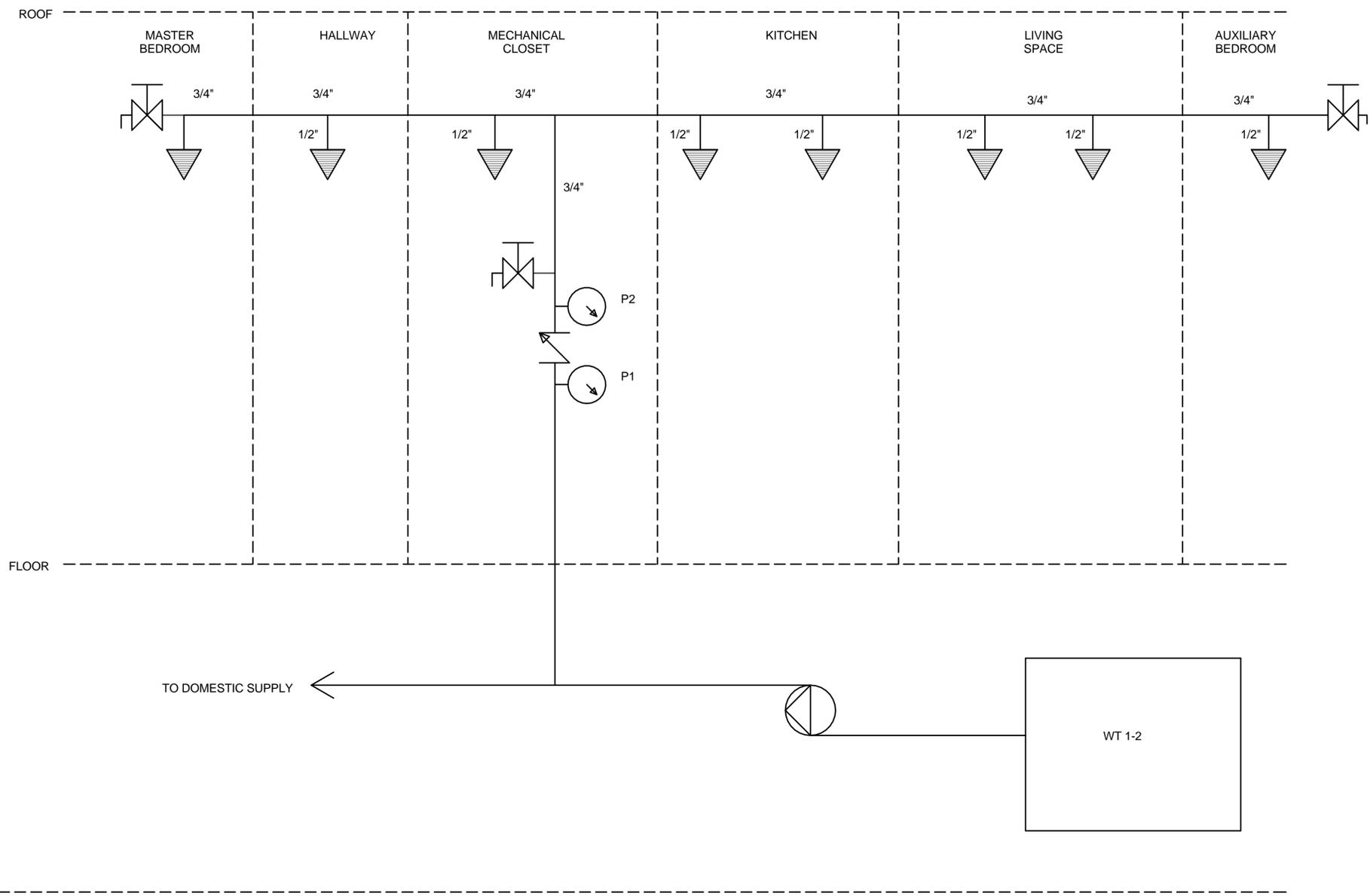
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**FIRE PROTECTION
DIAGRAM**

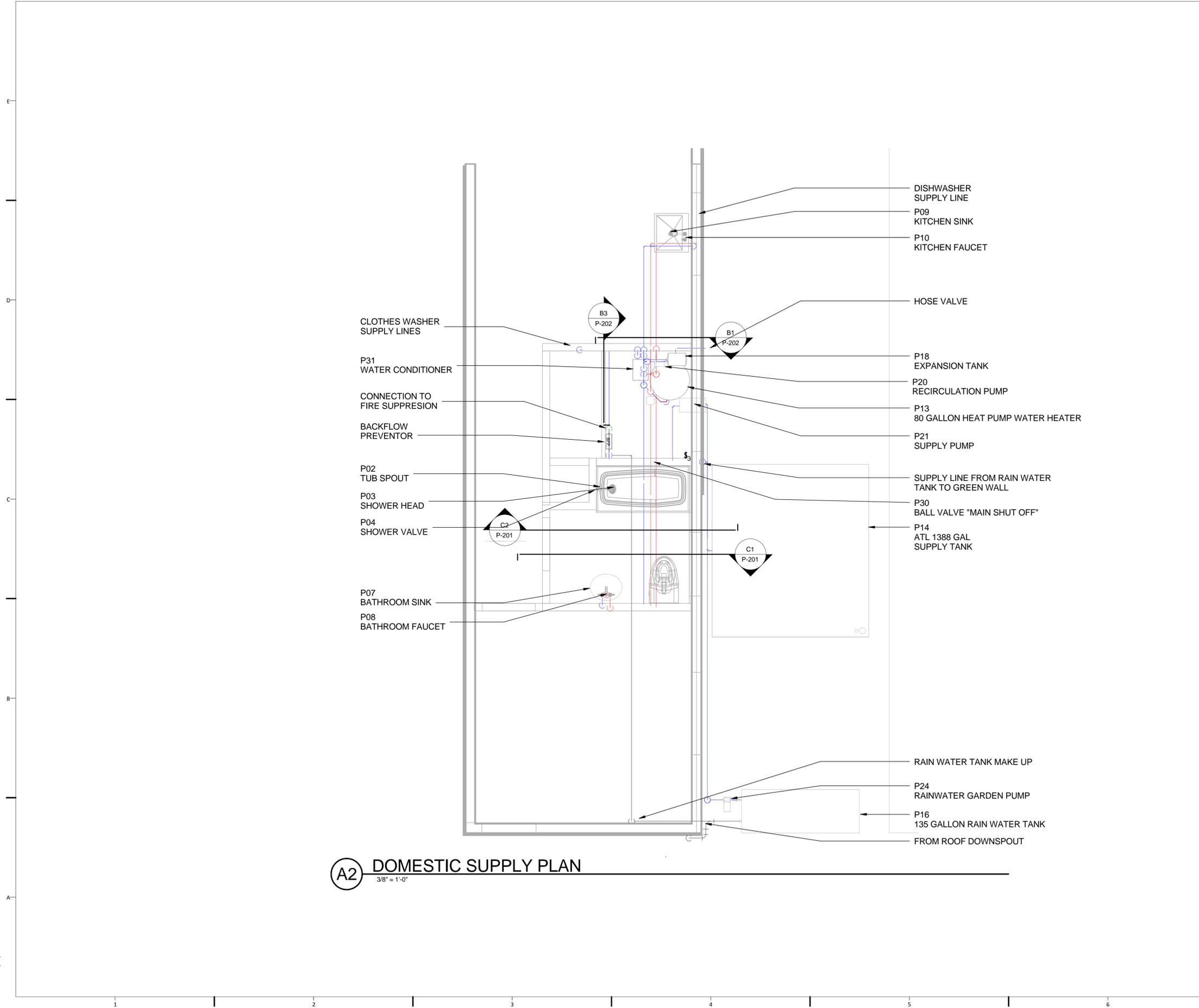
F-602



LEGEND

	WT	WATER TANK		MANUAL VALVE
		FIRE SPRINKLER HEAD		
		PUMP		
		BACKFLOW PREVENTOR		
	P1	PRESSURE GAGE/SENSOR		

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(A2) DOMESTIC SUPPLY PLAN
 3/8" = 1'-0"

GENERAL SHEET NOTES

ALL HOT WATER LINES MUST BE INSULATED.

THE HEAT PUMP WATER HEATER, EXPANSION TANK, AND WATER CONDITIONER WILL BE STRAPPED AND SECURED TO AN ADJACENT WALL.

COPPER TUBING MUST BE USED FOR AT LEAST 18" OUT FROM THE HOT WATER SIDE OF THE WATER HEATER.



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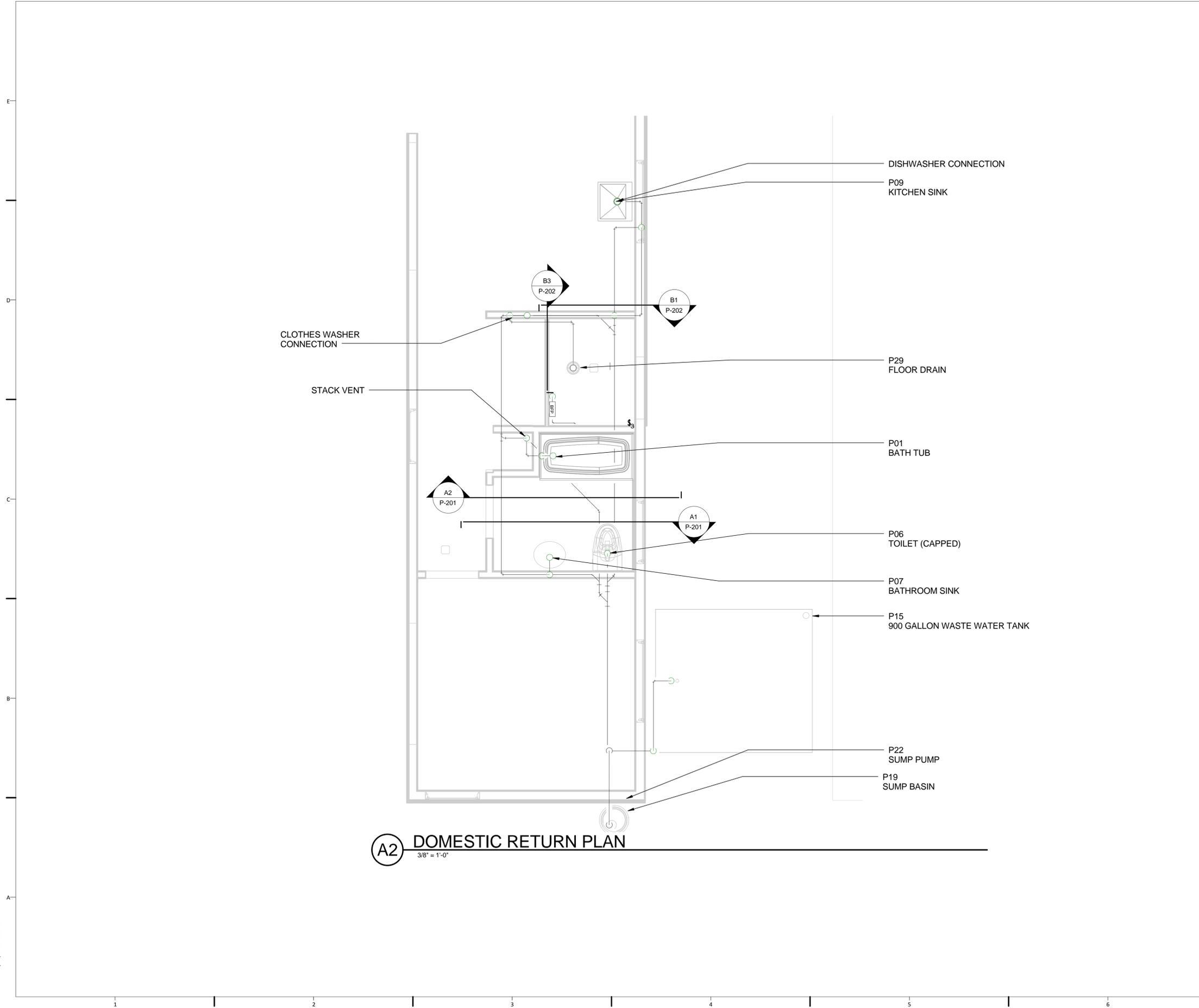
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DOMESTIC SUPPLY



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GENERAL SHEET NOTES

ALL HORIZONTAL RUNS WILL BE SLOPED AT A 1/4" DROP PER 1' OF PIPE RUN.

ALL VERTICAL RUNS WILL BE SLOPED BETWEEN 0 AND 45 DEGREES FROM VERTICAL.

THE TOILET WILL BE CAPPED AND UNOPERABLE DURING THE COMPETITION.



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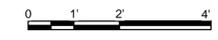
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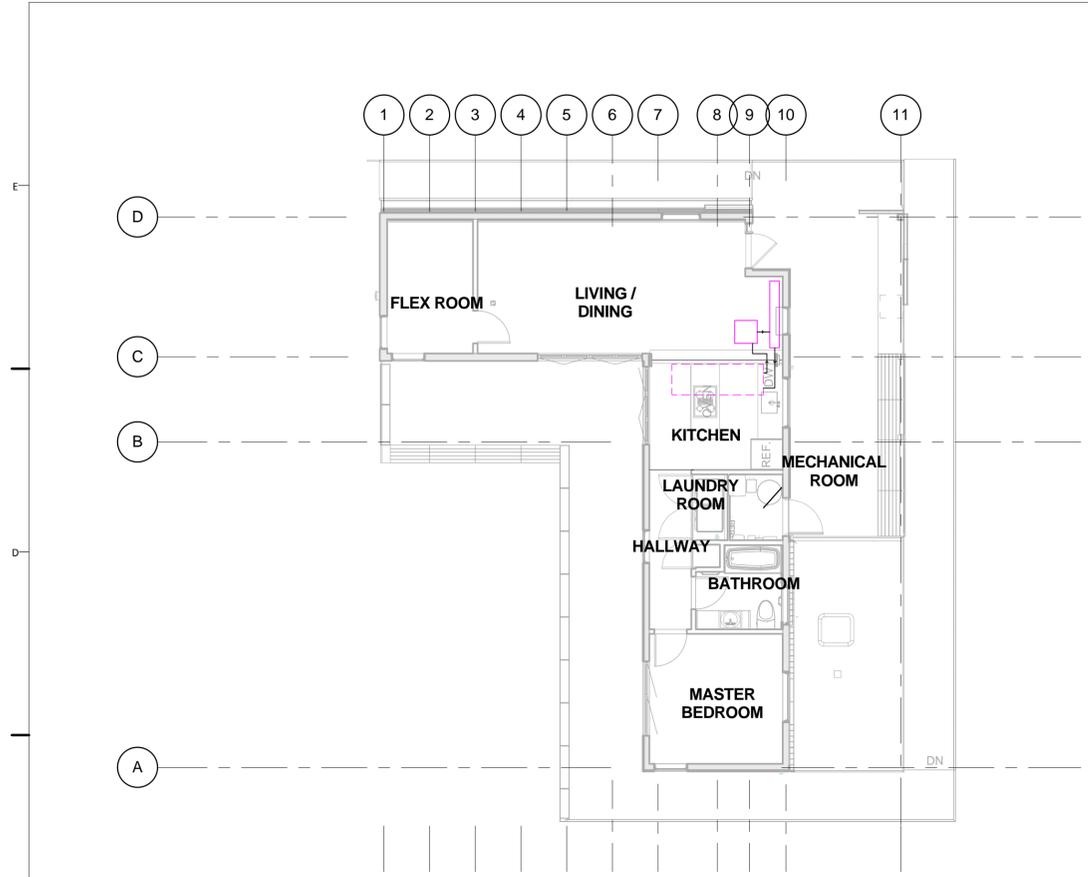
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DOMESTIC RETURN

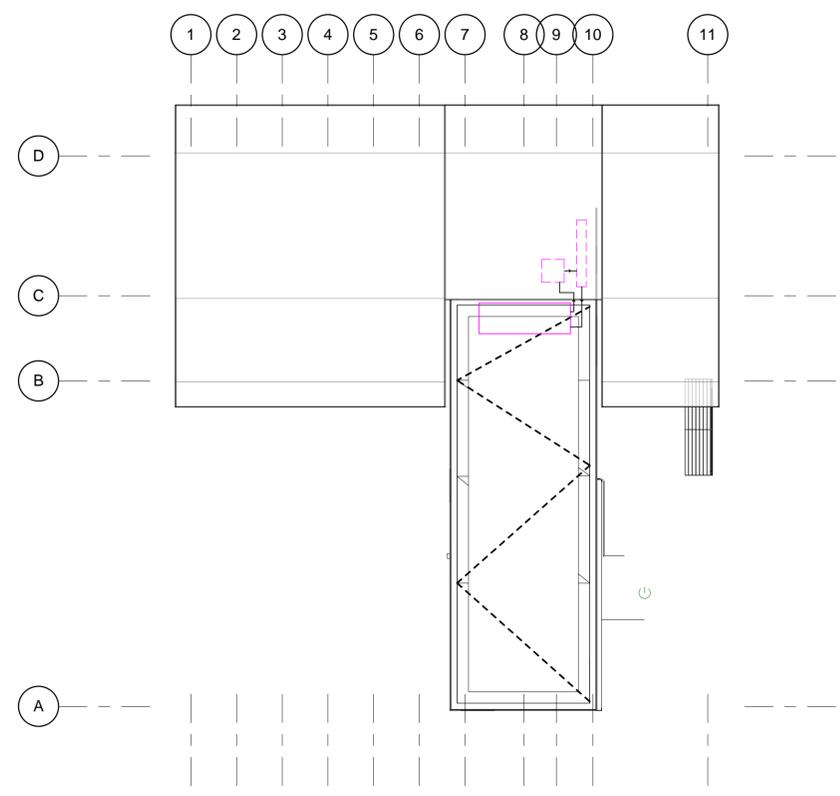


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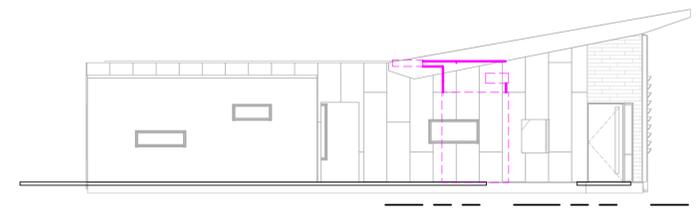
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C1 LIQUID DESICCANT INTERIOR PLAN
1/8" = 1'-0"



C4 LIQUID DESICCANT ROOF PLAN
1/8" = 1'-0"



A1 LIQUID DESICCANT - EAST ELEVATION
1/8" = 1'-0"

GENERAL SHEET NOTES

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LIQUID DESICCANT SYSTEM

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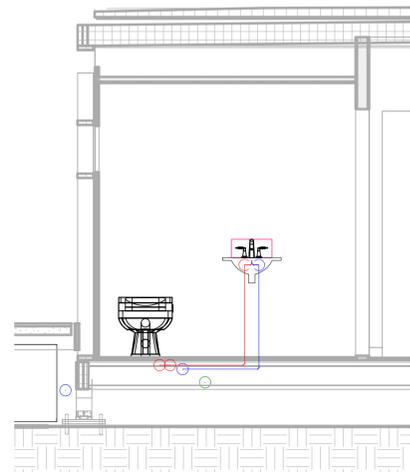


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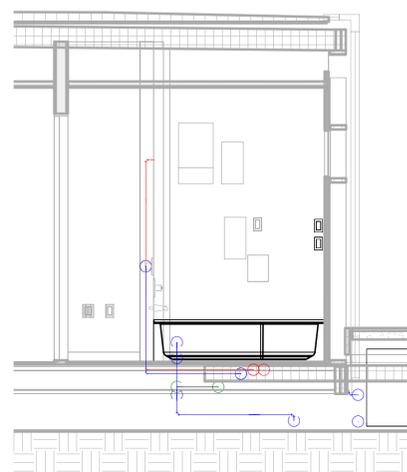
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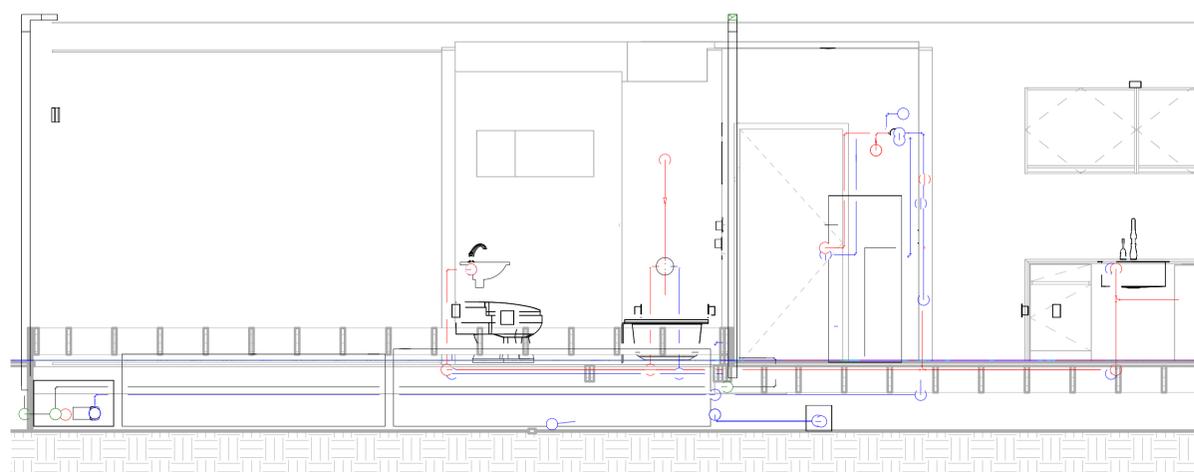
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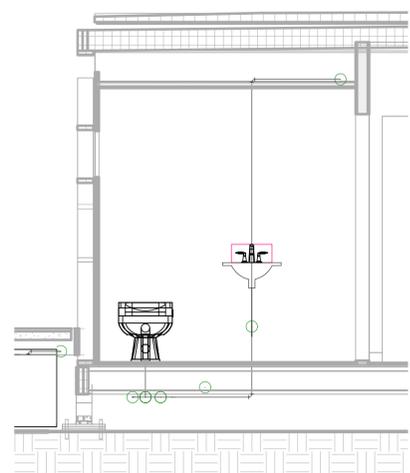
C1 DOMESTIC SUPPLY - SOUTH
3/8" = 1'-0"



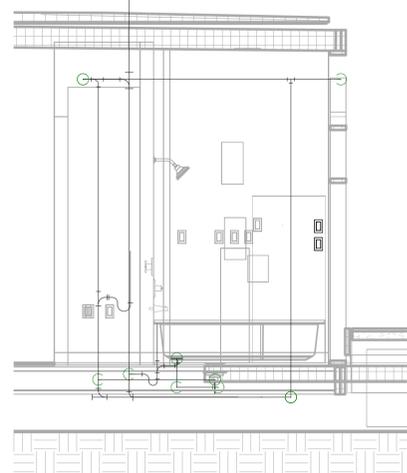
C2 DOMESTIC SUPPLY - NORTH
3/8" = 1'-0"



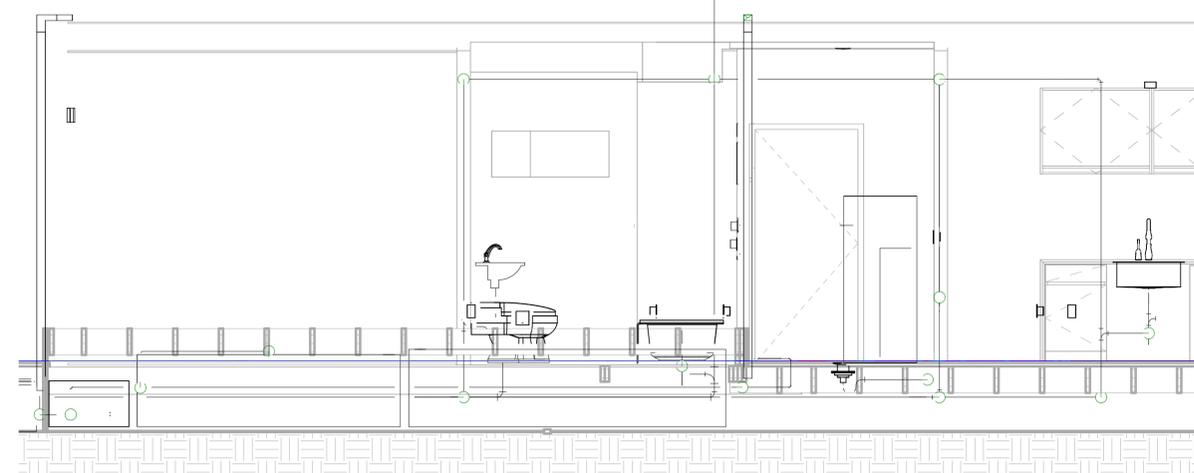
C4 DOMESTIC SUPPLY - EAST
3/8" = 1'-0"



A1 DOMESTIC RETURN - SOUTH
3/8" = 1'-0"



A2 DOMESTIC RETURN - NORTH
3/8" = 1'-0"



A4 DOMESTIC RETURN - EAST
3/8" = 1'-0"



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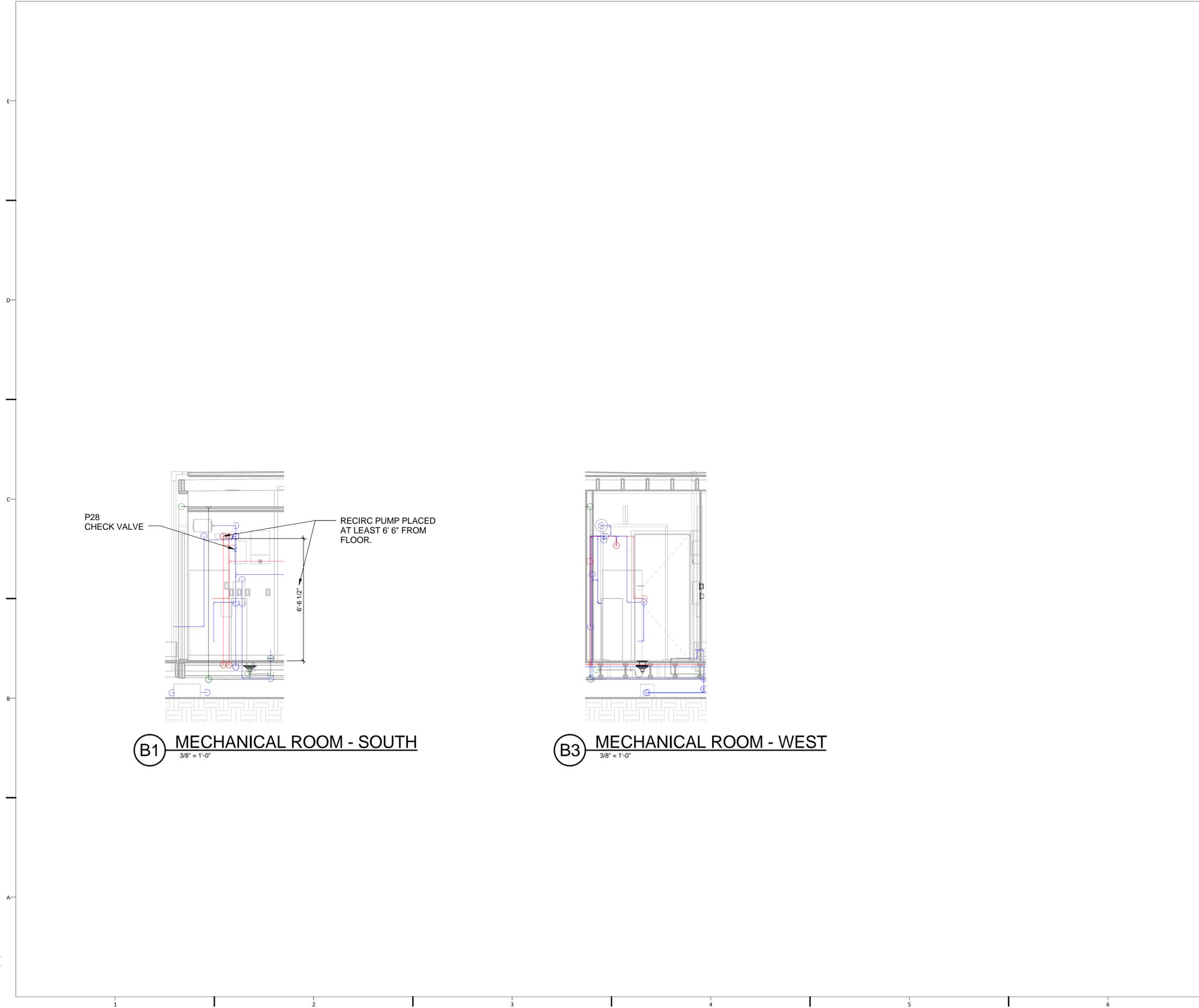
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PLUMBING ELEVATIONS

P-202

GENERAL SHEET NOTES

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P28 CHECK VALVE

RECIRC PUMP PLACED AT LEAST 6' 6" FROM FLOOR.

6' 6" 1/2"

B1 MECHANICAL ROOM - SOUTH
3/8" = 1'-0"

B3 MECHANICAL ROOM - WEST
3/8" = 1'-0"

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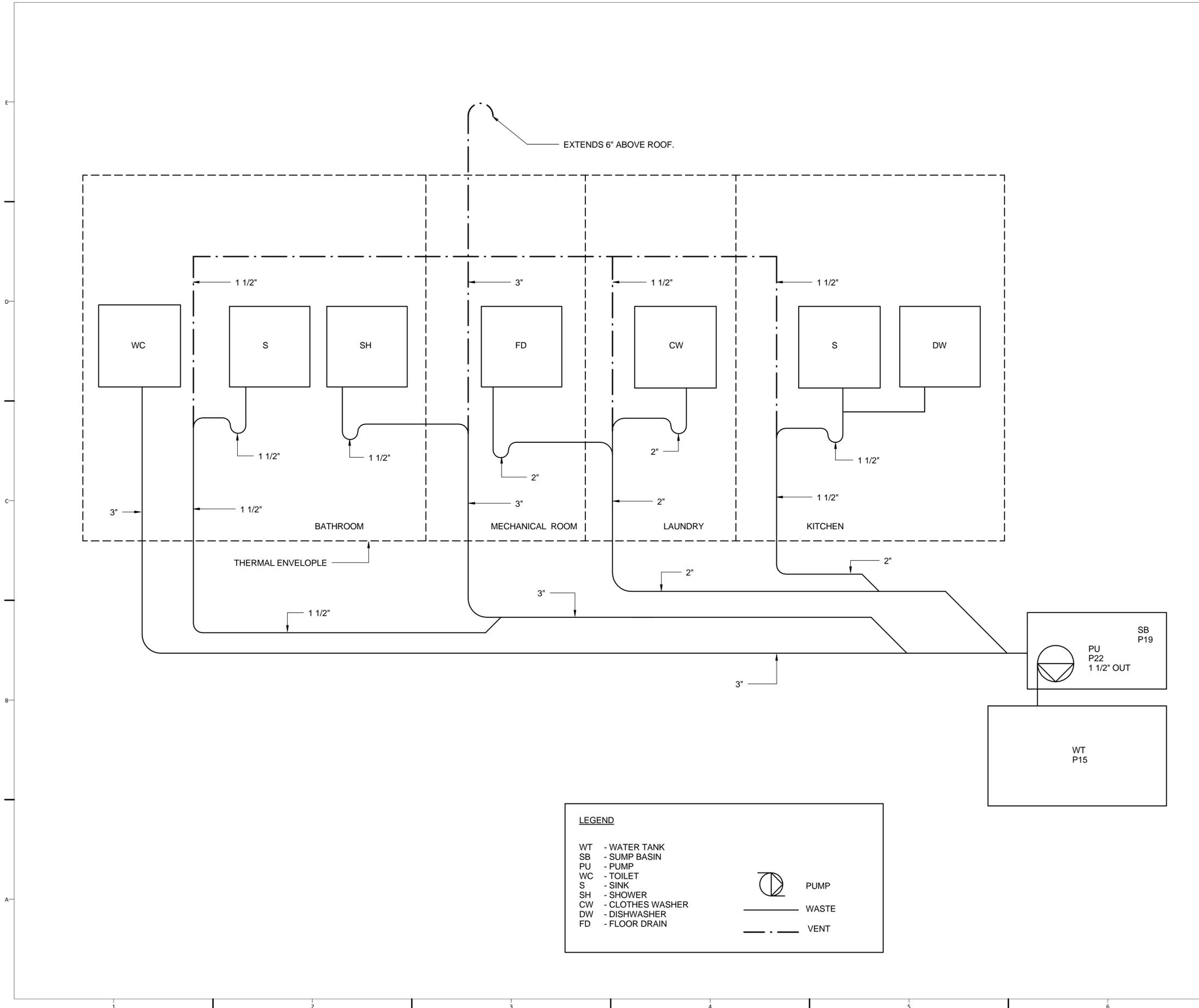
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PLUMBING SCHEDULES

P-601

PLUMBING EQUIPMENT SCHEDULE							
MARK	DESCRIPTION	MANUFACTURER	MODEL	UNIT DIMENSIONS (IN)			
				WIDTH	HEIGHT	DEPTH	DIAMETER
INTERIOR FIXTURES SCHEDULE							
P01	BATHTUB	KOHLER	K-715 VILLAGER	30.25	14	60	N/A
P02	TUB SPOUT	KOHLER	K-10280-4-CP	3	3	5.25	N/A
P03	SHOWER HEAD	KOHLER	K-10591-CP	5.31	5.31	4.69	N/A
P04	SHOWER VALVE	KOHLER	K-304-PS	N/A	N/A	3	N/A
P05	SHOWER VALVE LEVER HANDLE	KOHLER	K-T10277-4	N/A	N/A	5.25	6.38
P06	TOILET	KOHLER	K-3609-0	19.5	21.5	30	N/A
P07	BATHROOM SINK	IKEA	ODENSVIK	25.25	47.25	19.25	N/A
P08	BATHROOM FAUCET	IKEA	DALSKAR	N/A	N/A	N/A	N/A
P09	KITCHEN SINK	KOHLER	K-3822-1	25	22	9.31	N/A
P10	KITCHEN FAUCET	DELTA	978-SSWE-DST	N/A	14.25	N/A	N/A
P11	DISHWASHER	LG	LDF8072ST	23.75	33.63	24.63	N/A
P12	CLOTHES WASHER	LG	WM2655HVA	27	38.69	29.75	N/A
TANK AND WATER STORAGE SCHEDULE							
P13	80 GALLON HEAT PUMP WATER HEATER	AIRGENERATE	AIRTAP HYBRID AT166	N/A	69.3	N/A	25.6
P14	SUPPLY WATER TANK	AERO TEC LABS INC.	ATL CUSTOM 1388 GAL "AQUAFLEX TANK"	111	27	101	N/A
P15	WASTE WATER TANK	AERO TEC LABS INC.	ATL CUSTOM 900 GAL "AQUAFLEX TANK"	92	25	101	N/A
P16	RAIN WATER TANK	RONCO PLASTICS	B300	28	16	76	N/A
P17	CONDENSATE MISTING TANK	RONCO PLASTICS	B233	21	21	11.75	N/A
P18	2.1 GAL EXPANSION TANK	WATTS	PLT-5	N/A	11	N/A	8
P19	SUMP BASIN	JACKEL	SF-15	N/A	17.5	N/A	19
PUMP SCHEDULE							
P20	HOT WATER RECIRCULATION PUMP	GRUNDFOS	UP10-16BN5/LC	5.75	3.13	3.33	N/A
P21	SUPPLY PUMP	GRUNDFOS	MQ 3-35	8.57	12.59	22.4	N/A
P22	SUMP PUMP	GRUNDFOS	KP 150	N/A	9	N/A	6
P23	CONDENSATE MISTING PUMP	AQUATEC	5853-GE12-V81D	6	4.75	9	N/A
P24	RAIN WATER GARDEN PUMP	AQUATEC	5510-1C12-B526	6	4.75	9	N/A
PIPING SCHEDULE							
P25	PEX PIPING	WATTS	WPTC	N/A	N/A	N/A	N/A
P26	PEX PIPING	UPONOR	F3061000	N/A	N/A	N/A	N/A
SPECIALTY SCHEDULE							
P27	REMOVED FROM PROJECT	N/A	N/A	N/A	N/A	N/A	N/A
P28	CHECK VALVE	SHARKBITE	N/A	N/A	N/A	N/A	N/A
P29	FLOOR DRAIN	WATTS	N/A	N/A	2.125	N/A	5
P30	BALL VALVE	SHARKBITE	N/A	N/A	N/A	N/A	N/A
P31	WATER CONDITIONER	WATTS	OFRES0935	14.438	47.625	22.438	N/A

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LEGEND

WT - WATER TANK	
SB - SUMP BASIN	
PU - PUMP	
WC - TOILET	
S - SINK	
SH - SHOWER	
CW - CLOTHES WASHER	
DW - DISHWASHER	
FD - FLOOR DRAIN	
	PUMP
	WASTE
	VENT

GENERAL SHEET NOTES

ALL PIPE DIMENSIONS ARE DIAMETERS.

ALL PIPING DIAMETERS LISTED ARE INNER DIAMETERS.



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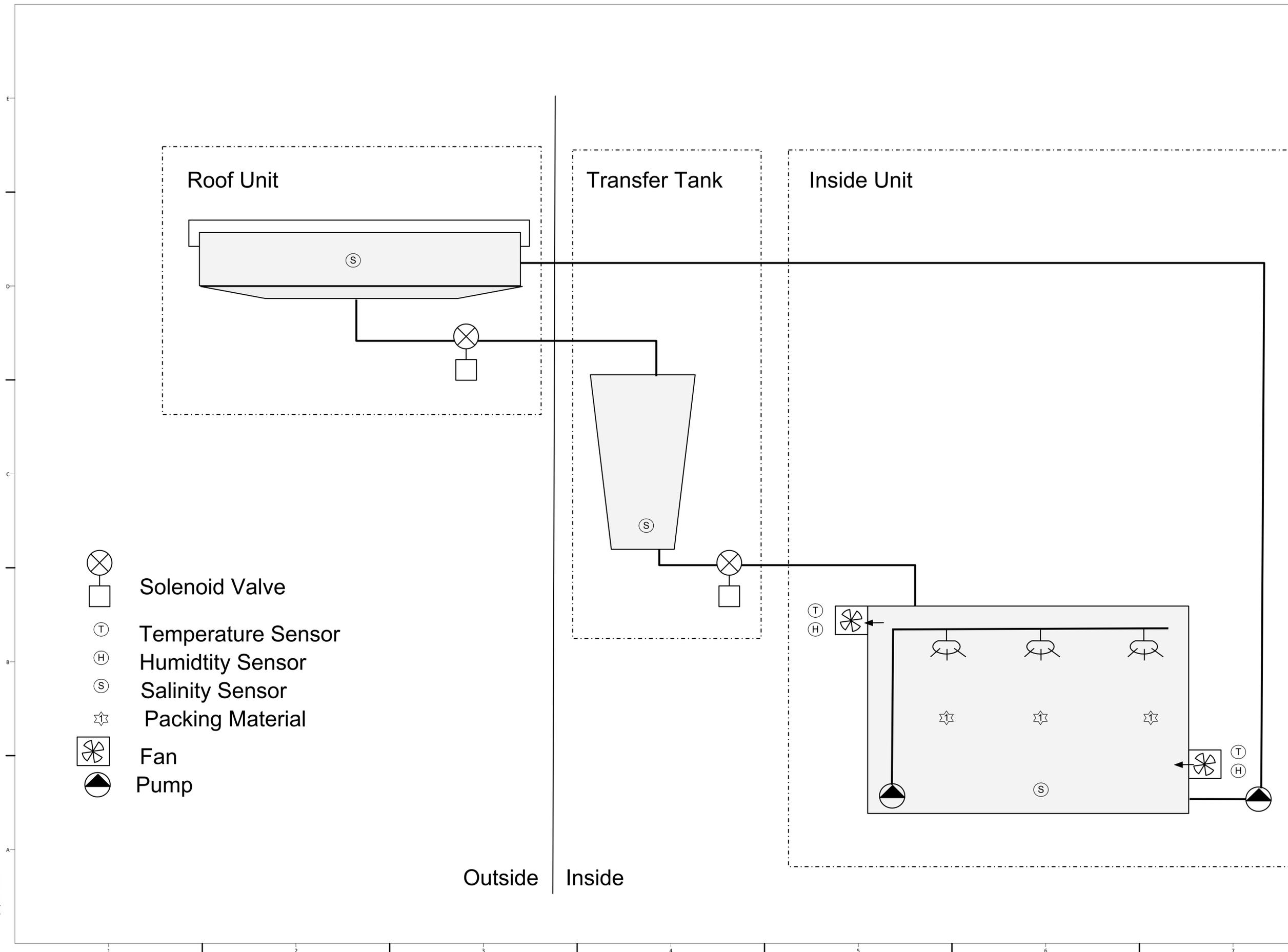


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**LIQUID DESICCANT
FLOW DIAGRAM**

P-604



- Solenoid Valve
- Temperature Sensor
- Humidity Sensor
- Salinity Sensor
- Packing Material
- Fan
- Pump

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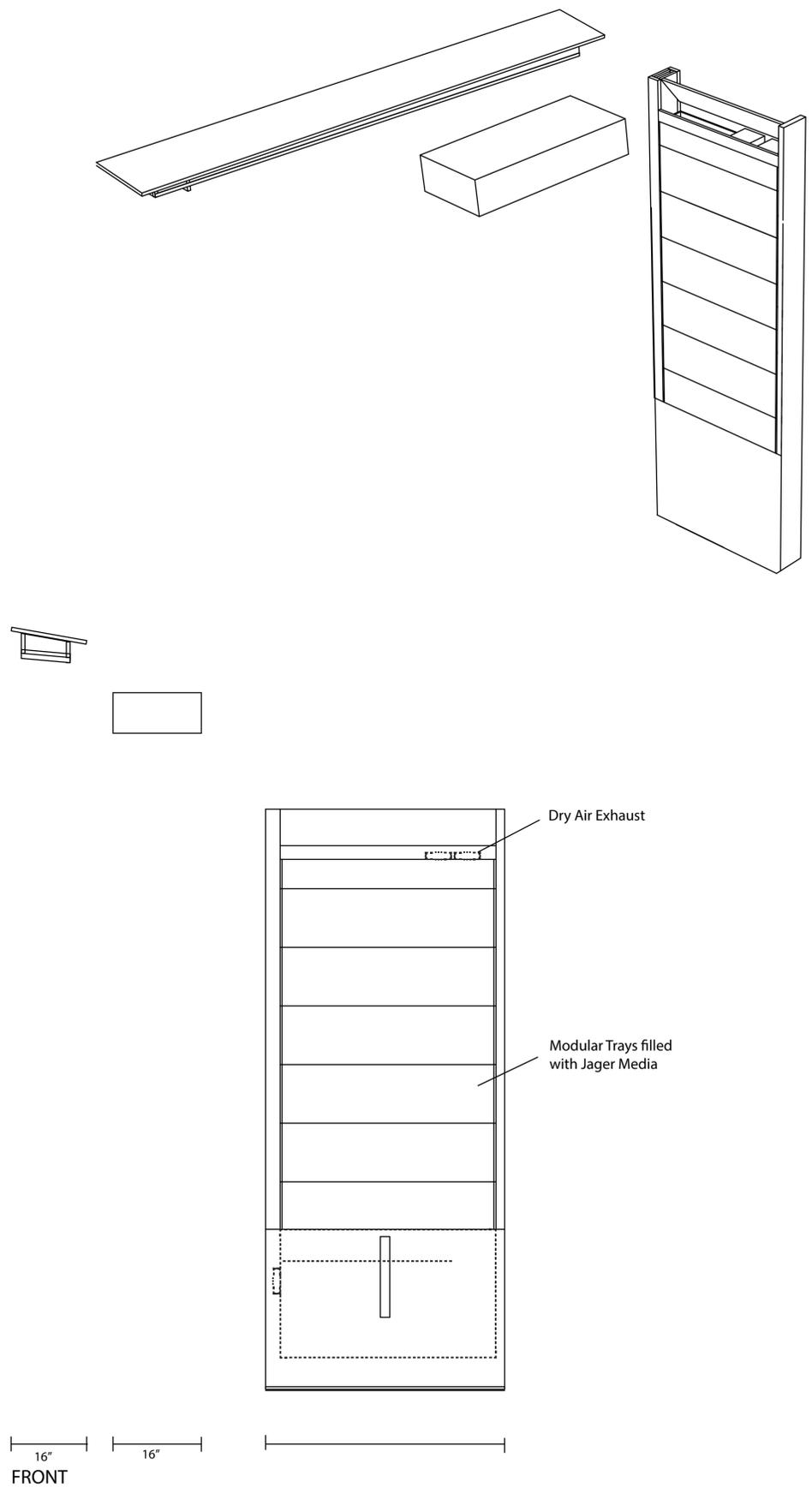
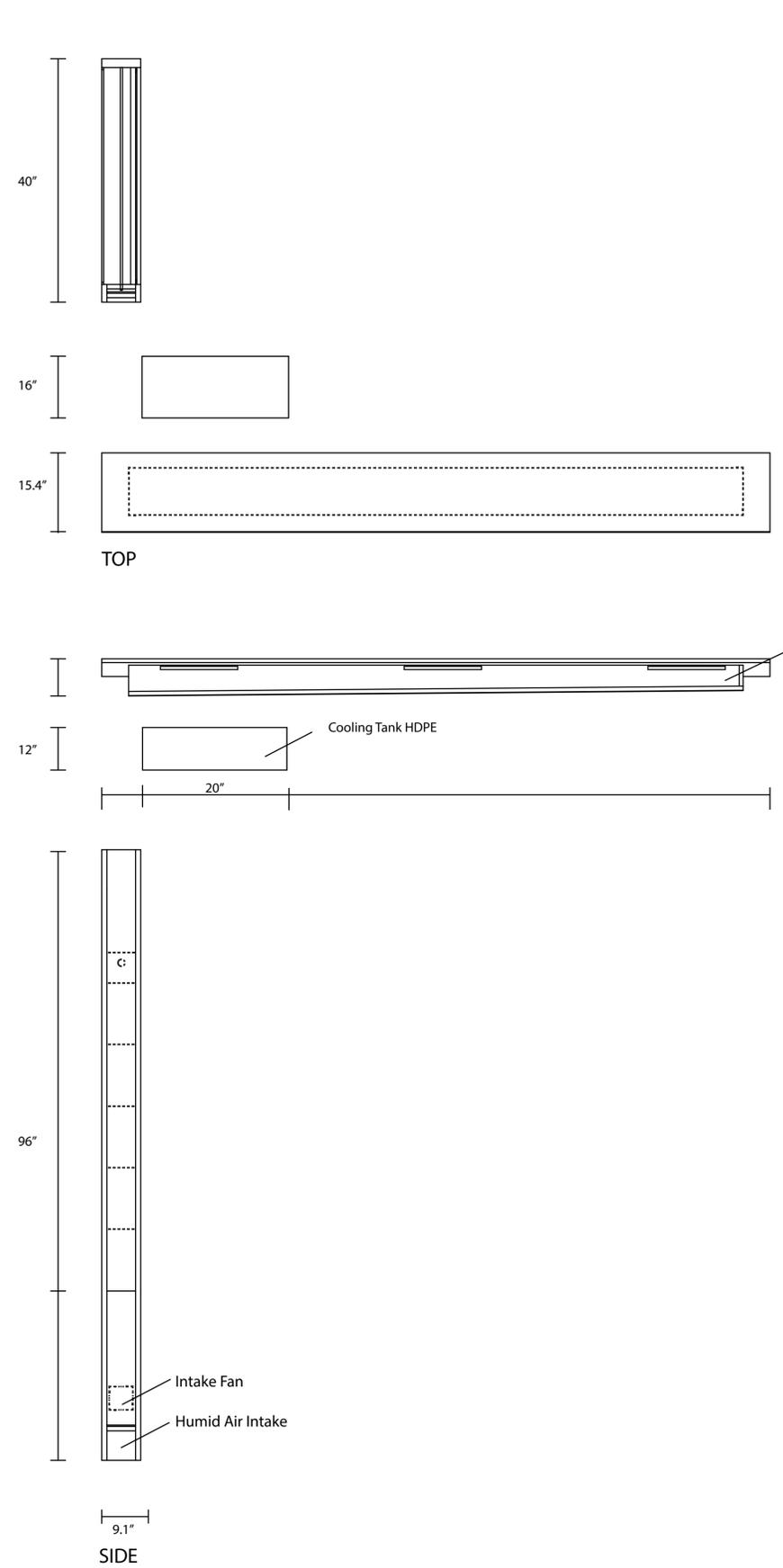
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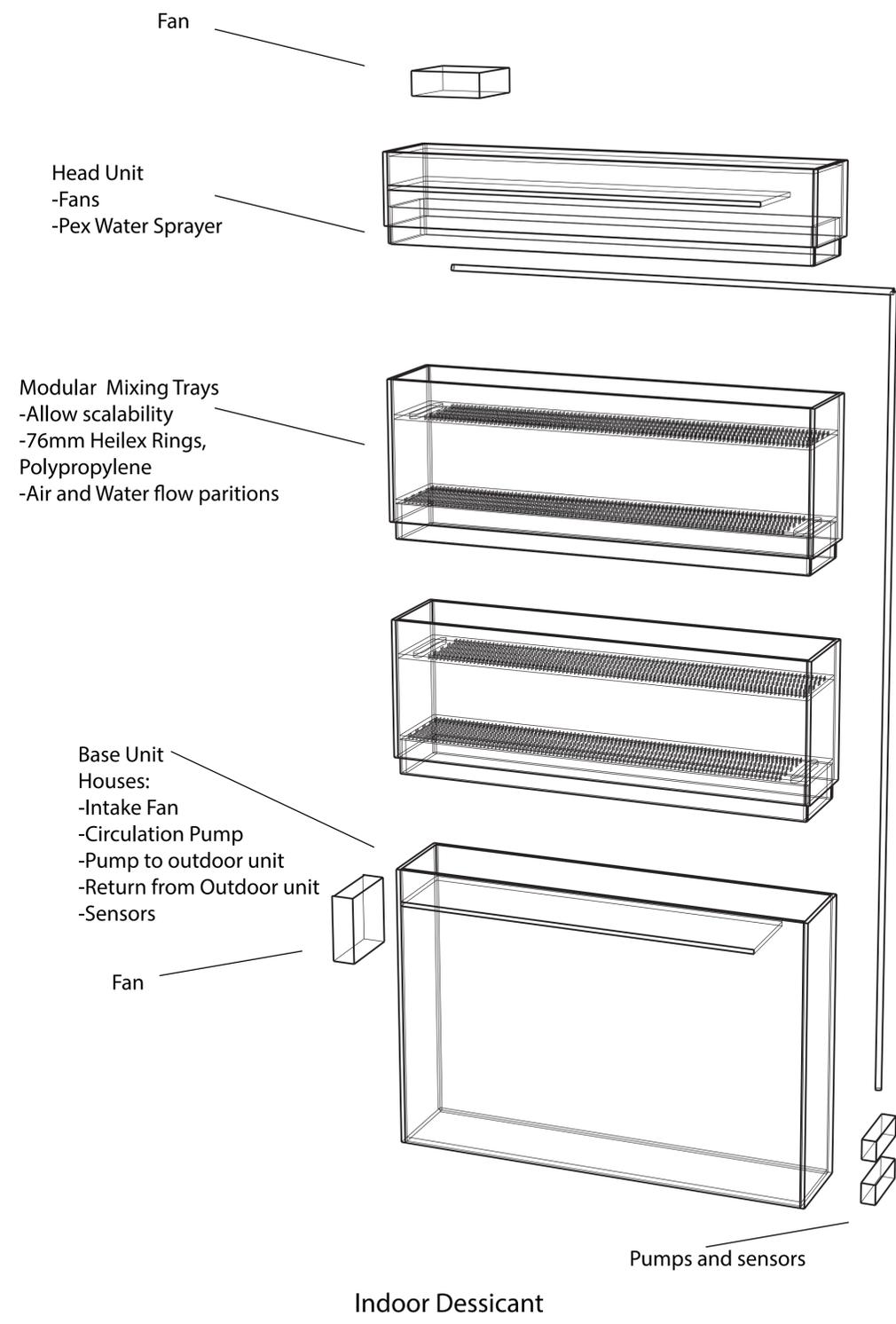
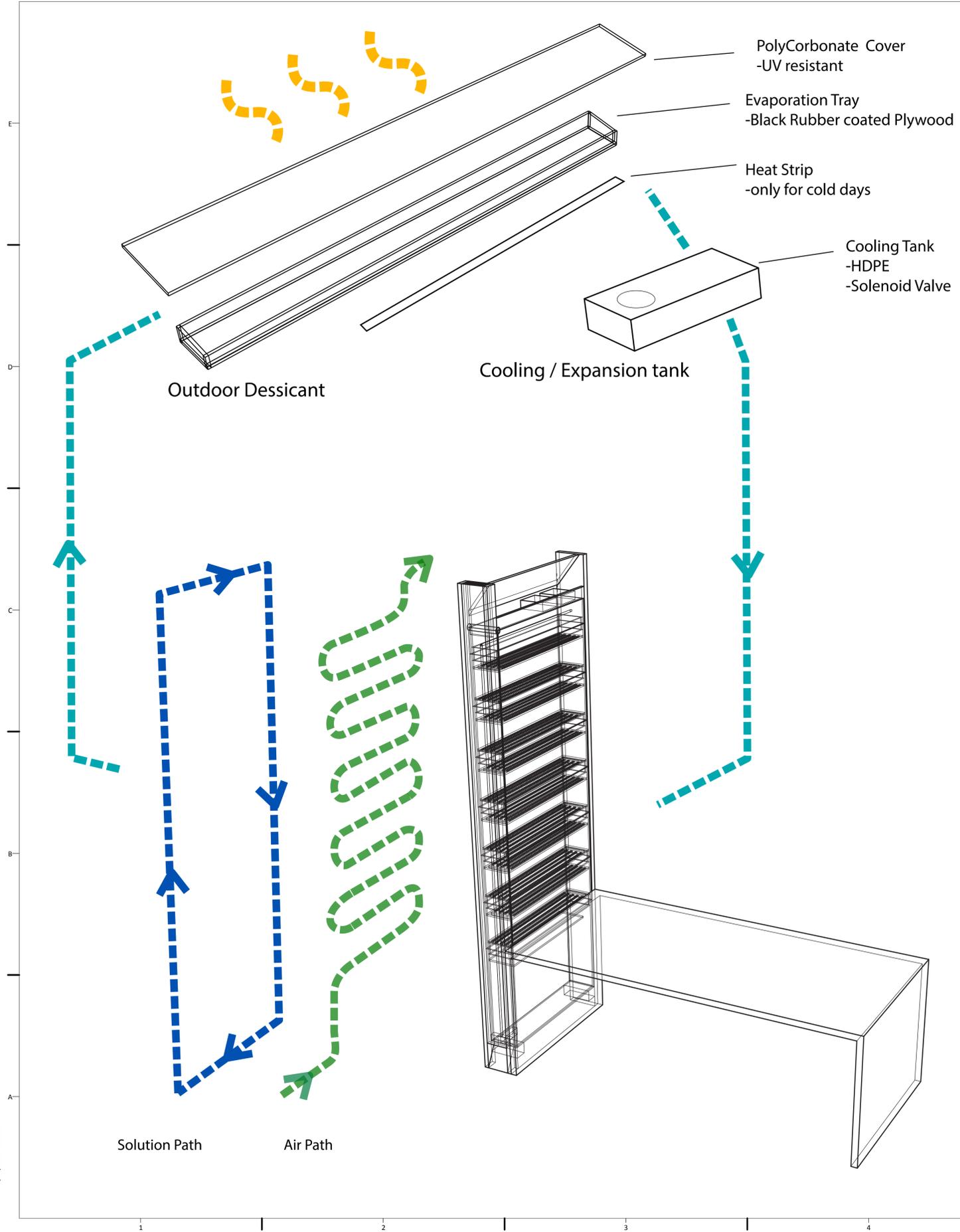
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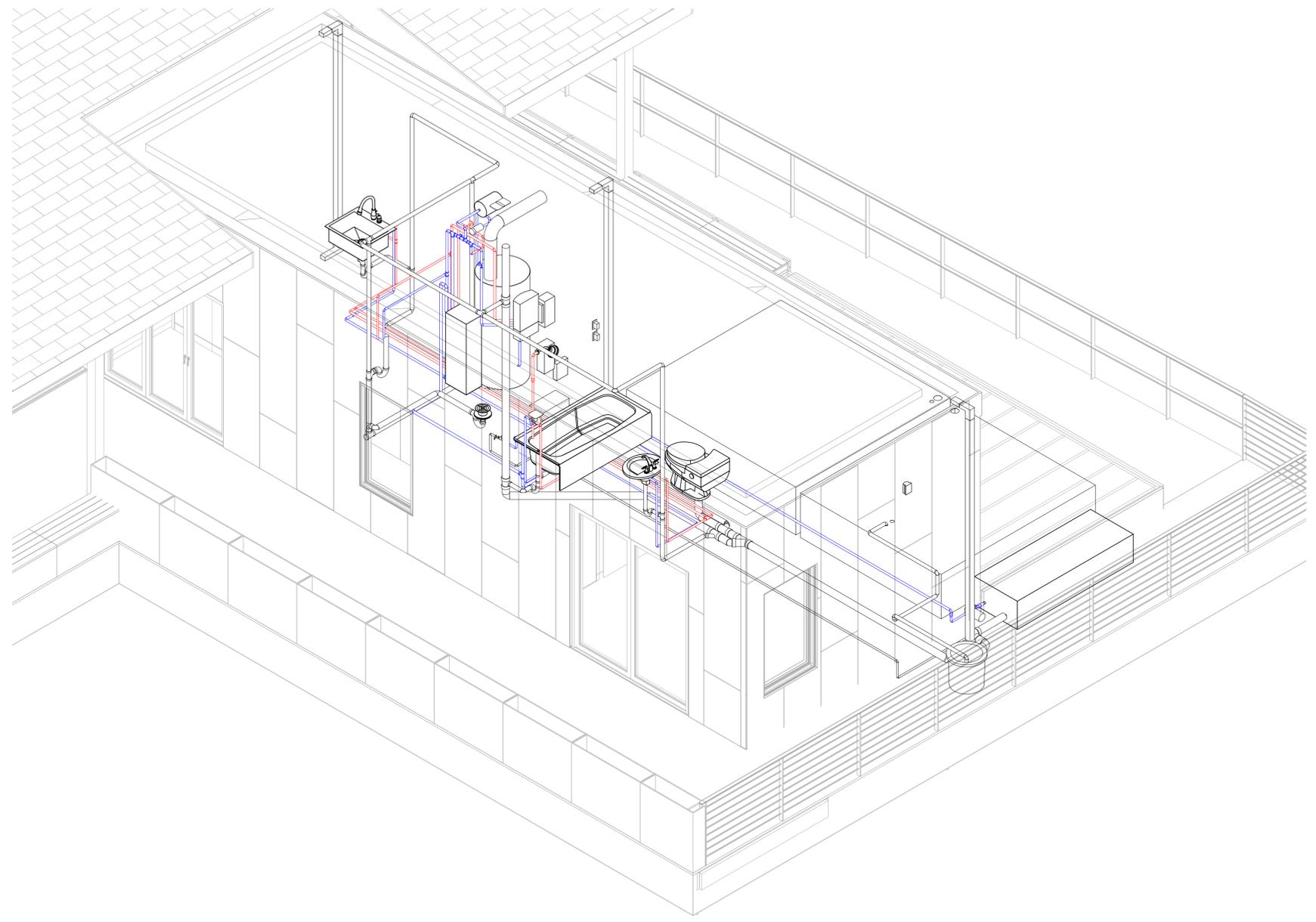


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MECHANICAL NOTES

1. SECTION M1306
CLEARANCES FROM COMBUSTIBLE CONSTRUCTION

M1306.1 APPLIANCE CLEARANCE. APPLIANCES SHALL BE INSTALLED WITH THE CLEARANCES FROM UNPROTECTED COMBUSTIBLE MATERIALS AS INDICATED ON THE APPLIANCE LABEL AND IN THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

2. SECTION M1307
APPLIANCE INSTALLATION

2a. M1307.1 GENERAL. INSTALLATION OF APPLIANCES SHALL CONFORM TO THE CONDITIONS OF THEIR LISTING AND LABEL AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

THE MANUFACTURER'S OPERATING AND INSTALLATION INSTRUCTIONS SHALL REMAIN ATTACHED TO THE APPLIANCE.

MECHANICAL ROOM FLOOR IS WATER RESISTANT

2b. M1307.2 ANCHORAGE OF APPLIANCES. APPLIANCES DESIGNED TO BE FIXED IN POSITION SHALL BE FASTENED OR ANCHORED IN AN APPROVED MANNER.

M1307.6 PLUMBING CONNECTIONS. POTABLE WATER AND DRAINAGE SYSTEM CONNECTIONS TO EQUIPMENT AND APPLIANCES REGULATED BY THIS CODE SHALL BE IN ACCORDANCE WITH CHAPTERS 29 AND 30.

THIS CODE SHALL BE IN ACCORDANCE WITH CHAPTERS 29 AND 30.

3. SECTION M1308
MECHANICAL SYSTEMS INSTALLATION

3a. M1308.1 DRILLING AND NOTCHING. WOOD-FRAMED STRUCTURAL MEMBERS SHALL BE DRILLED, NOTCHED OR ALTERED IN ACCORDANCE WITH THE PROVISIONS OF SECTIONS R502.8, R602.6, R602.6.1 AND R802.7.

HOLES IN LOAD-BEARING MEMBERS OF COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION SHALL BE PERMITTED ONLY IN ACCORDANCE WITH SECTIONS R505.2.5, R603.2.5 AND R804.2.5. IN ACCORDANCE WITH THE PROVISIONS OF SECTIONS R505.3.5, R603.3.4 AND R804.3.4, CUTTING AND NOTCHING OF FLANGES AND LIPS OF LOAD-BEARING MEMBERS OF COLD-FORMED STEEL LIGHT FRAME CONSTRUCTION SHALL NOT BE PERMITTED.

STRUCTURAL INSULATED PANELS (SIPS) SHALL BE DRILLED AND NOTCHED OR ALTERED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R612.9. INSTRUCTIONS.

4a. SECTION M1401
GENERAL

4b. M1401.1 INSTALLATION. HEATING AND COOLING EQUIPMENT AND APPLIANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND THE REQUIREMENTS OF THIS CODE.

4c. M1401.2 ACCESS. HEATING AND COOLING EQUIPMENT SHALL BE LOCATED WITH RESPECT TO BUILDING CONSTRUCTION AND OTHER EQUIPMENT TO PERMIT MAINTENANCE, SERVICING AND REPLACEMENT. CLEARANCES SHALL BE MAINTAINED TO PERMIT CLEANING OF HEATING AND COOLING SURFACES; REPLACEMENT OF FILTERS, BLOWERS, MOTORS, CONTROLS AND VENT CONNECTIONS; LUBRICATION OF MOVING PARTS; AND ADJUSTMENTS.

4d. M1401.4 EXTERIOR INSTALLATIONS. EQUIPMENT INSTALLED OUTDOORS SHALL BE LISTED AND LABELED FOR OUTDOOR INSTALLATION. SUPPORTS AND FOUNDATIONS SHALL PREVENT EXCESSIVE VIBRATION, SETTLEMENT OR MOVEMENT OF THE EQUIPMENT. SUPPORTS AND FOUNDATIONS SHALL BE LEVEL AND CONFORM TO THE MANUFACTURER'S INSTALLATION

M1401.5 FLOOD HAZARD. IN AREAS PRONE TO FLOODING AS ESTABLISHED BY TABLE R301.2(1), HEATING AND COOLING EQUIPMENT AND APPLIANCES SHALL BE LOCATED OR INSTALLED IN ACCORDANCE WITH SECTION R322.1.6.

5. SECTION M1403
HEAT PUMP EQUIPMENT

5a. M1403.1 HEAT PUMPS. THE MINIMUM UNOBSTRUCTED TOTAL AREA OF THE OUTSIDE AND RETURN AIR DUCTS OR OPENINGS TO A HEAT PUMP SHALL BE NOT LESS THAN 6 SQUARE INCHES PER 1,000 BTU/H (13 208MM2/KW) OUTPUT RATING OR AS INDICATED BY THE CONDITIONS OF THE LISTING OF THE HEAT PUMP. ELECTRIC HEAT PUMPS SHALL CONFORM TO UL 1995.

5b. M1403.2 FOUNDATIONS AND SUPPORTS. SUPPORTS AND FOUNDATIONS FOR THE OUTDOOR UNIT OF A HEAT PUMP SHALL BE RAISED AT LEAST 3 INCHES (76 MM) ABOVE THE GROUND TO PERMIT FREE DRAINAGE OF DEFROST WATER, AND SHALL CONFORM TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

6. SECTION M1411
HEATING AND COOLING EQUIPMENT

6a. M1411.1 APPROVED REFRIGERANTS. REFRIGERANTS USED IN DIRECT REFRIGERATING SYSTEMS SHALL CONFORM TO THE APPLICABLE PROVISIONS OF ANSIASHRAE 34.

6b. M1411.3 CONDENSATE DISPOSAL. CONDENSATE FROM ALL COOLING COILS OR EVAPORATORS SHALL BE CONVEYED FROM THE DRAIN PAN OUTLET TO AN APPROVED PLACE OF DISPOSAL. SUCH PIPING SHALL MAINTAIN A MINIMUM HORIZONTAL SLOPE IN THE DIRECTION OF DISCHARGE OF NOT LESS THAN 1/8 UNIT VERTICAL IN 12 UNITS HORIZONTAL (I-PERCENT SLOPE). CONDENSATE SHALL NOT DISCHARGE INTO A STREET, ALLEY OR OTHER AREAS WHERE IT WOULD CAUSE A NUISANCE.

6c. M1411.3.1 AUXILIARY AND SECONDARY DRAIN SYSTEMS. IN ADDITION TO THE REQUIREMENTS OF SECTION M1411.3, A SECONDARY DRAIN OR AUXILIARY DRAIN PAN SHALL BE REQUIRED FOR EACH COOLING OR EVAPORATOR COIL WHERE DAMAGE TO ANY BUILDING COMPONENTS WILL OCCUR AS A RESULT OF OVERFLOW FROM THE EQUIPMENT DRAIN PAN OR STOPPAGE IN THE CONDENSATE DRAIN PIPING. SUCH PIPING SHALL MAINTAIN A MINIMUM HORIZONTAL SLOPE IN THE DIRECTION OF DISCHARGE OF NOT LESS THAN 1/8 UNIT VERTICAL IN 12 UNITS HORIZONTAL (I-PERCENT SLOPE). DRAIN PIPING SHALL BE A MINIMUM OF 3/4-INCH (19 MM) NOMINAL PIPE SIZE. ONE OF THE FOLLOWING METHODS SHALL BE USED:

1. AN AUXILIARY DRAIN PAN WITH A SEPARATE DRAIN SHALL BE INSTALLED UNDER THE COILS ON WHICH CONDENSATION WILL OCCUR. THE AUXILIARY PAN DRAIN SHALL DISCHARGE TO A CONSPICUOUS POINT OF DISPOSAL TO ALERT OCCUPANTS IN THE EVENT OF A STOPPAGE OF THE PRIMARY DRAIN. THE PAN SHALL HAVE A MINIMUM DEPTH OF 1.5 INCHES (38 MM), SHALL NOT BE LESS THAN 3 INCHES (76 MM) LARGER THAN THE UNIT OR THE COIL DIMENSIONS IN WIDTH AND LENGTH AND SHALL BE CONSTRUCTED OF CORROSION-RESISTANT MATERIAL. GALVANIZED SHEET STEEL PANS SHALL HAVE A MINIMUM THICKNESS OF NOT LESS THAN 0.0236-INCH (0.6010 MM) (NO. 24 GAGE). NONMETALLIC PANS SHALL HAVE A MINIMUM THICKNESS OF NOT LESS THAN 0.0625 INCH (1.6 MM) .

2. A SEPARATE OVERFLOW DRAIN LINE SHALL BE CONNECTED TO THE DRAIN PAN INSTALLED WITH THE EQUIPMENT. THIS OVERFLOW DRAIN SHALL DISCHARGE TO A CONSPICUOUS POINT OF DISPOSAL TO ALERT OCCUPANTS IN THE EVENT OF A STOPPAGE OF THE PRIMARY DRAIN. THE OVERFLOW DRAIN LINE SHALL CONNECT TO THE DRAIN PAN AT A HIGHER LEVEL THAN THE PRIMARY DRAIN CONNECTION.

3. AN AUXILIARY DRAIN PAN WITHOUT A SEPARATE DRAIN LINE SHALL BE INSTALLED UNDER THE COILS ON WHICH CONDENSATION WILL OCCUR. THIS PAN SHALL BE EQUIPPED WITH A WATER LEVEL DETECTION DEVICE CONFORMING TO UL 508 THAT WILL SHUT OFF THE EQUIPMENT SERVED PRIOR TO OVERFLOW OF THE PAN. THE PAN SHALL BE EQUIPPED WITH A FITTING TO ALLOW FOR DRAINAGE. THE AUXILIARY DRAIN PAN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 1 OF THIS SECTION.

4. A WATER LEVEL DETECTION DEVICE CONFORMING TO UL 508 SHALL BE INSTALLED THAT WILL SHUT OFF THE EQUIPMENT SERVED IN THE EVENT THAT THE PRIMARY DRAIN IS BLOCKED. THE DEVICE SHALL BE INSTALLED IN THE PRIMARY DRAIN LINE, THE OVERFLOW DRAIN LINE OR THE EQUIPMENT-SUPPLIED DRAIN PAN, LOCATED AT A POINT HIGHER THAN THE PRIMARY DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM OF SUCH PAN.

6d. M1411.3.2 DRAIN PIPE MATERIALS AND SIZES. COMPONENTS OF THE CONDENSATE DISPOSAL SYSTEM SHALL BE CAST IRON, GALVANIZED STEEL, COPPER, POLYBUTYLENE, POLYETHYLENE, ABS, CPVC OR PVC PIPE OR TUBING. ALL COMPONENTS SHALL BE SELECTED FOR THE PRESSURE AND TEMPERATURE RATING OF THE INSTALLATION. JOINTS AND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH THE MATERIALS SPECIFIED IN CHAPTER 30. CONDENSATE WASTE AND DRAIN LINE SIZE SHALL BE NOT LESS THAN 3/4-INCH (19 MM) INTERNAL DIAMETER AND SHALL NOT DECREASE IN SIZE FROM THE DRAIN PAN CONNECTION TO THE PLACE OF CONDENSATE DISPOSAL. WHERE THE DRAIN PIPES FROM MORE THAN ONE UNIT ARE MANIFOLDED TOGETHER FOR CONDENSATE DRAINAGE, THE PIPE OR TUBING SHALL BE SIZED IN ACCORDANCE WITH AN APPROVED METHOD.

6e. M1411.4 AUXILIARY DRAIN PAN. CATEGORY IV CONDENSING APPLIANCES SHALL HAVE AN AUXILIARY DRAIN PAN WHERE DAMAGE TO ANY BUILDING COMPONENT WILL OCCUR AS A RESULT OF STOPPAGE IN THE CONDENSATE DRAINAGE SYSTEM. THESE PANS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF SECTION M1411.3.

6f. M1411.5 INSULATION OF REFRIGERANT PIPING. PIPING AND FITTINGS FOR REFRIGERANT VAPOR (SUCTION) LINES SHALL BE INSULATED WITH INSULATION HAVING A THERMAL RESISTIVITY OF AT LEAST R-4 AND HAVING EXTERNAL SURFACE PERMEANCE NOT EXCEEDING 0.05 PERM [2.87NG/(S . M2 . PA)] WHEN TESTED IN ACCORDANCE WITH ASTM E 96.

7. CHAPTER 15
EXHAUST SYSTEMS

M1501.1 OUTDOOR DISCHARGE. THE AIR REMOVED BY EVERY MECHANICAL EXHAUST SYSTEM SHALL BE DISCHARGED TO THE OUTDOORS. AIR SHALL NOT BE EXHAUSTED INTO AN ATTIC, SOFFIT, RIDGE VENT OR CRAWL SPACE.

8. SECTION M1506
EXHAUST DUCTS

M1506.1 DUCTS. WHERE EXHAUST DUCT CONSTRUCTION IS NOT SPECIFIED IN THIS CHAPTER, CONSTRUCTION SHALL COMPLY WITH CHAPTER 16.

9. SECTION M1507
MECHANICAL VENTILATION

9a. M1507.1 GENERAL. WHERE TOILET ROOMS AND BATHROOMS ARE MECHANICALLY VENTILATED, THE VENTILATION EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THIS SECTION.

9b. M1507.3 VENTILATION RATE. VENTILATION SYSTEMS SHALL BE DESIGNED TO HAVE THE CAPACITY TO EXHAUST THE MINIMUM AIR FLOW RATE DETERMINED IN ACCORDANCE WITH TABLE M1507.3.

9c. TABLE M1507.3
MINIMUM REQUIRED EXHAUST RATES FOR ONE- AND TWO-FAMILY DWELLINGS AREA TO BE VENTILATED VENTILATION RATES

KITCHENS
100 CFM INTERMITTENT OR
25 CFM CONTINUOUS
MECHANICAL EXHAUST CAPACITY OF
BATHROOMS-TOILET ROOMS 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS
FOR SI: 1 CUBIC FOOT PER MINUTE = 0.4719 LIS.

10. CHAPTER 16
DUCT SYSTEMS

10a. M1601.1 DUCT DESIGN. DUCT SYSTEMS SERVING HEATING, COOLING AND VENTILATION EQUIPMENT SHALL BE FABRICATED IN ACCORDANCE WITH THE PROVISIONS OF THIS SECTION AND ACCA MANUAL D OR OTHER APPROVED METHODS.

10b. M1601.1.1 ABOVE-GROUND DUCT SYSTEMS. ABOVE-GROUND DUCT SYSTEMS SHALL CONFORM TO THE FOLLOWING:
1. EQUIPMENT CONNECTED TO DUCT SYSTEMS SHALL BE DESIGNED TO LIMIT DISCHARGE AIR TEMPERATURE TO A MAXIMUM OF 250°F (121°C) .
2. FACTORY-MADE AIR DUCTS SHALL BE CONSTRUCTED OF CLASS 0 OR CLASS 1 MATERIALS AS DESIGNATED IN TABLE M1601.1.1 (1).

3. FIBROUS DUCT CONSTRUCTION SHALL CONFORM TO THE SMACNA FIBROUS GLASS DUCT CONSTRUCTION STANDARDS OR NAIMA FIBROUS GLASS DUCT CONSTRUCTION STANDARDS.

4. MINIMUM THICKNESS OF METAL DUCT MATERIAL SHALL BE AS LISTED IN TABLE M1601.1.1 (2). GALVANIZED STEEL SHALL CONFORM TO ASTM A 653.

5. USE OF GYPSUM PRODUCTS TO CONSTRUCT RETURN AIR DUCTS OR PLENUMS IS PERMITTED, PROVIDED THAT THE AIR TEMPERATURE DOES NOT EXCEED 125°F (52°C) AND EXPOSED SURFACES ARE NOT SUBJECT TO CONDENSATION.

6. DUCT SYSTEMS SHALL BE CONSTRUCTED OF MATERIALS HAVING A FLAME SPREAD INDEX NOT GREATER THAN 200.
7. STUD WALL CAVITIES AND THE SPACES BETWEEN SOOLID FLOOR JOISTS TO BE USED AS AIR PLENUMS SHALL COMPLY WITH THE FOLLOWING CONDITIONS:
7.1. THESE CAVITIES OR SPACES SHALL NOT BE USED AS A PLENUM FOR SUPPLY AIR.

7.2. THESE CAVITIES OR SPACES SHALL NOT BE PART OF A REQUIRED FIRE-RESISTANCE-RATED ASSEMBLY.

7.3. STUD WALL CAVITIES SHALL NOT CONVEY AIR FROM MORE THAN ONE FLOOR LEVEL.

7.4. STUD WALL CAVITIES AND JOIST-SPACE PLENUMS SHALL BE ISOLATED FROM ADJACENT CONCEALED SPACES BY TIGHT-FITTING FIRE BLOCKING IN ACCORDANCE WITH SECTION R602.8

10c. M1601.2 FACTORY-MADE DUCTS. FACTORY-MADE AIR DUCTS OR DUCT MATERIAL SHALL BE APPROVED FOR THE USE INTENDED, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. EACH PORTION OF A FACTORY-MADE AIR DUCT SYSTEM SHALL BEAR A LISTING AND LABEL INDICATING COMPLIANCE WITH UL 181 AND UL 181A OR UL 181B.

10d. M1601.2.1 VIBRATION ISOLATORS. VIBRATION ISOLATORS INSTALLED BETWEEN MECHANICAL EQUIPMENT AND METAL DUCTS SHALL BE FABRICATED FROM APPROVED MATERIALS AND SHALL NOT EXCEED 10 INCHES (254 MM) IN LENGTH.

10e. M1601.3 DUCT INSULATION MATERIALS. DUCT INSULATION MATERIALS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

1. DUCT COVERINGS AND LININGS, INCLUDING ADHESIVES WHERE USED, SHALL HAVE A FLAME SPREAD INDEX NOT HIGHER THAN 25, AND A SMOKE-DEVELOPED INDEX NOT OVER 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723, USING THE SPECIMEN PREPARATION AND MOUNTING PROCEDURES OF ASTM E 2231.

10f. M1601.4 INSTALLATION. DUCT INSTALLATION SHALL COMPLY WITH SECTIONS M1601.4.1 THROUGH M1601.4.7.

10g. M1601.4.1 JOINTS AND SEAMS. JOINTS OF DUCT SYSTEMS SHALL BE MADE SUBSTANTIALLY AIRTIGHT BY MEANS OF TAPES, MASTICS, LIQUID SEALANTS, GASKETING OR OTHER APPROVED CLOSURE SYSTEMS. CLOSURE SYSTEMS USED WITH RIGID FIBROUS GLASS DUCTS SHALL COMPLY WITH UL181A AND SHALL BE MARKED 181A-P FOR PRESSURE-SENSITIVE TAPE, 181A-M FOR MASTIC OR 181 A-H FOR HEAT-SENSITIVE TAPE. CLOSURE SYSTEMS USED WITH FLEXIBLE AIR DUCTS AND FLEXIBLE AIR CONNECTORS SHALL COMPLY WITH UL 181B AND SHALL BE MARKED 181B-FX FOR PRESSURE-SENSITIVE TAPE OR 181B-M FOR MASTIC. DUCT CONNECTIONS TO FLANGES OF AIR DISTRIBUTION SYSTEM EQUIPMENT OR SHEET METAL FITTINGS SHALL BE MECHANICALLY FASTENED. MECHANICAL FASTENERS FOR USE WITH FLEXIBLE NONMETALLIC AIR DUCTS SHALL COMPLY WITH UL 181B AND SHALL BE MARKED 181B-C. CRIMP JOINTS FOR ROUND METAL DUCTS SHALL HAVE A CONTACT LAP OF AT LEAST 111Z INCHES (38 MM) AND SHALL BE MECHANICALLY FASTENED BY MEANS OF AT LEAST THREE SHEET-METAL SCREWS OR RIVETS EQUALLY SPACED AROUND THE JOINT. CLOSURE SYSTEMS USED TO SEAL METAL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.



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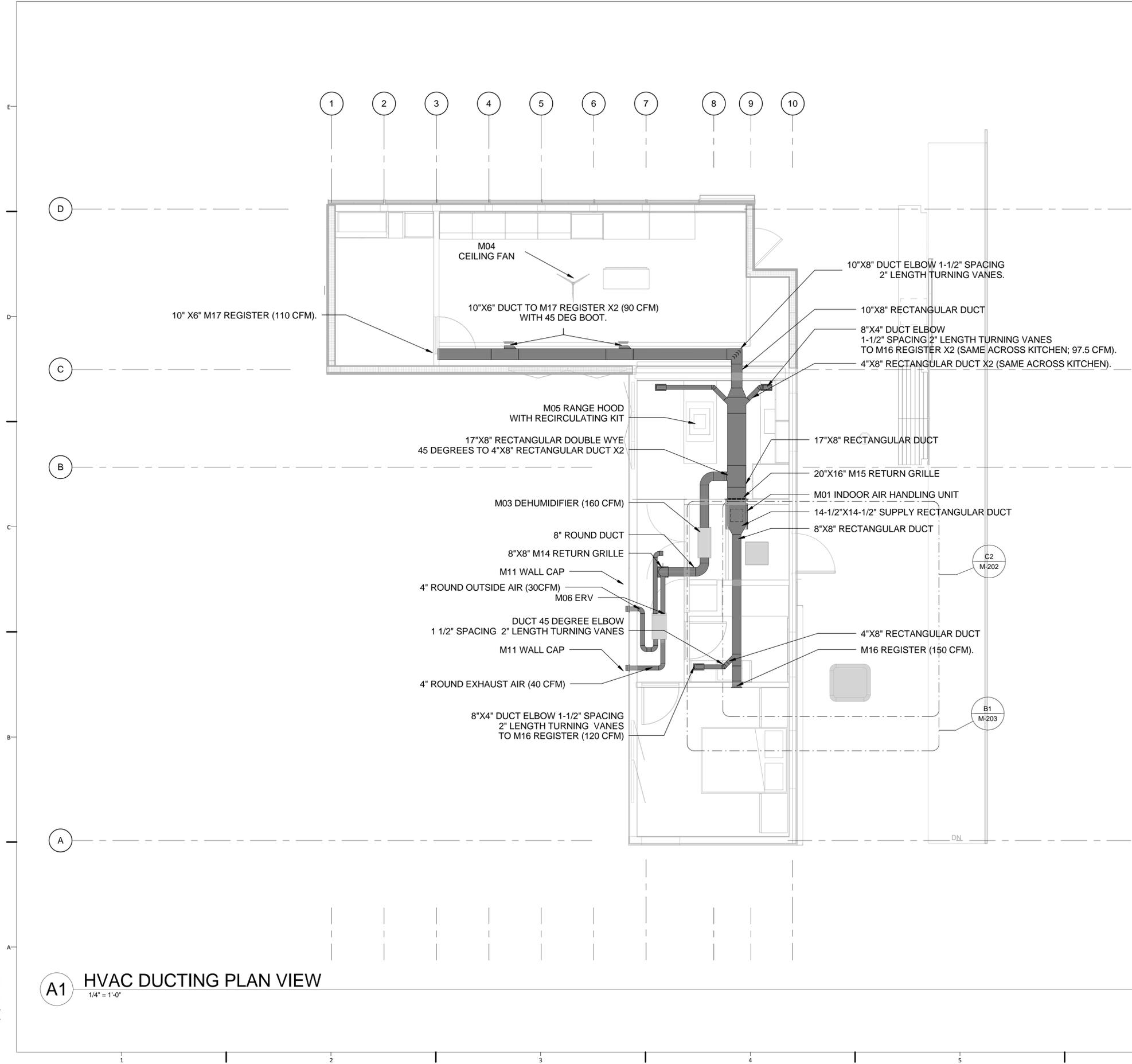


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MECHANICAL SYMBOLS
AND NOTES

M-001



GENERAL SHEET NOTES
 ALL DUCT IS GALVANIZED 16 GAUGE SHEET METAL.
 ALL SUPPLY DUCT IS SURROUNDED BY 1 1/2\"/>



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HVAC AIR DISTRIBUTION PLAN



M-101

A1 HVAC DUCTING PLAN VIEW
 1/4" = 1'-0"

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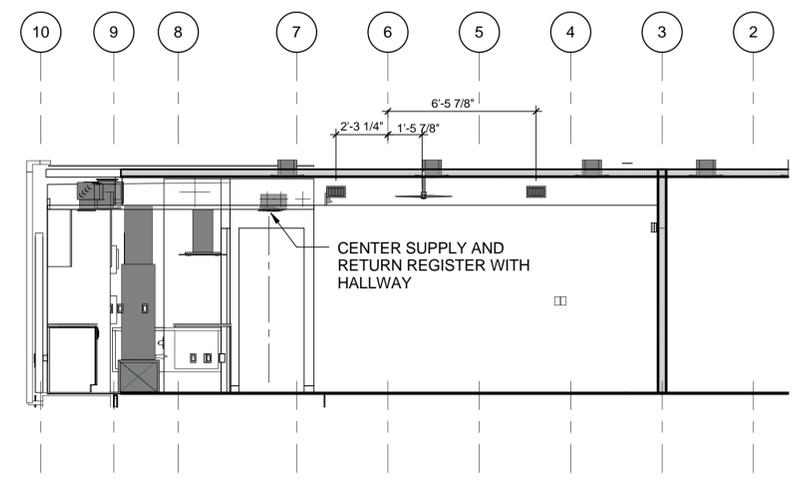
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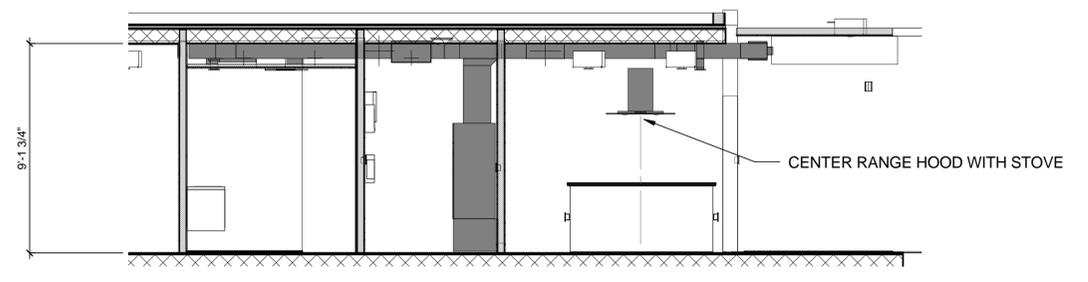
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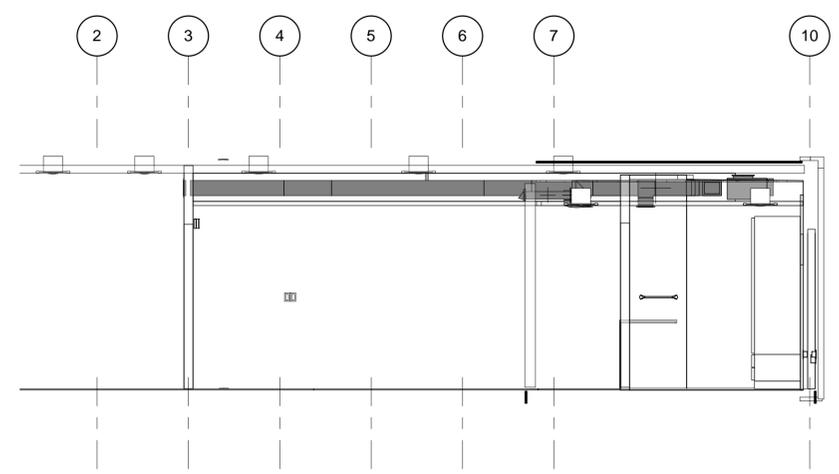
SHEET TITLE
HVAC ELEVATIONS



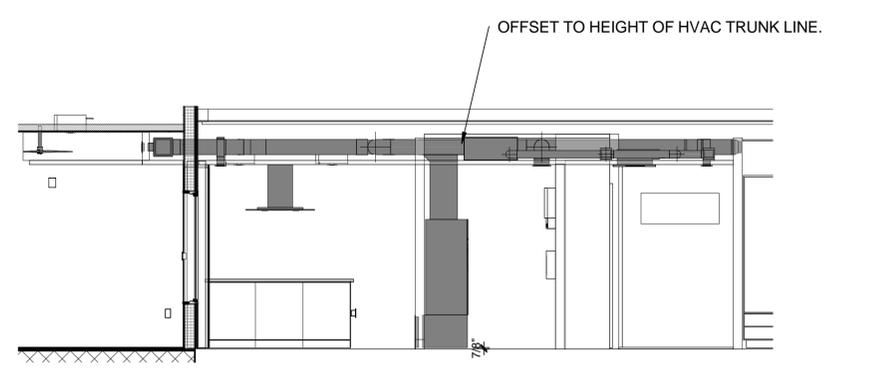
D1 HVAC DUCTING - SOUTH
1/4" = 1'-0"



D4 HVAC DUCTING - WEST
1/4" = 1'-0"

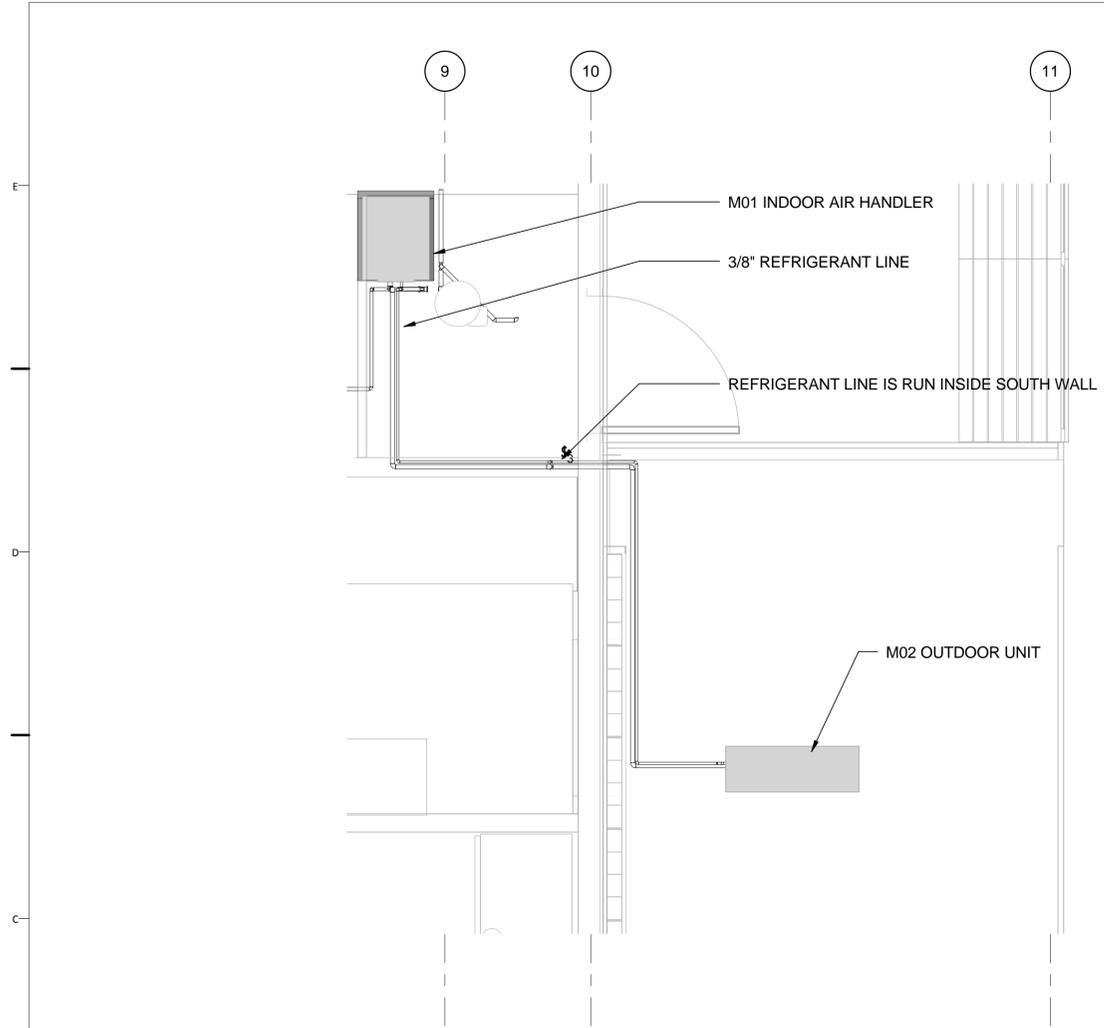


A1 HVAC DUCTING - NORTH
1/4" = 1'-0"

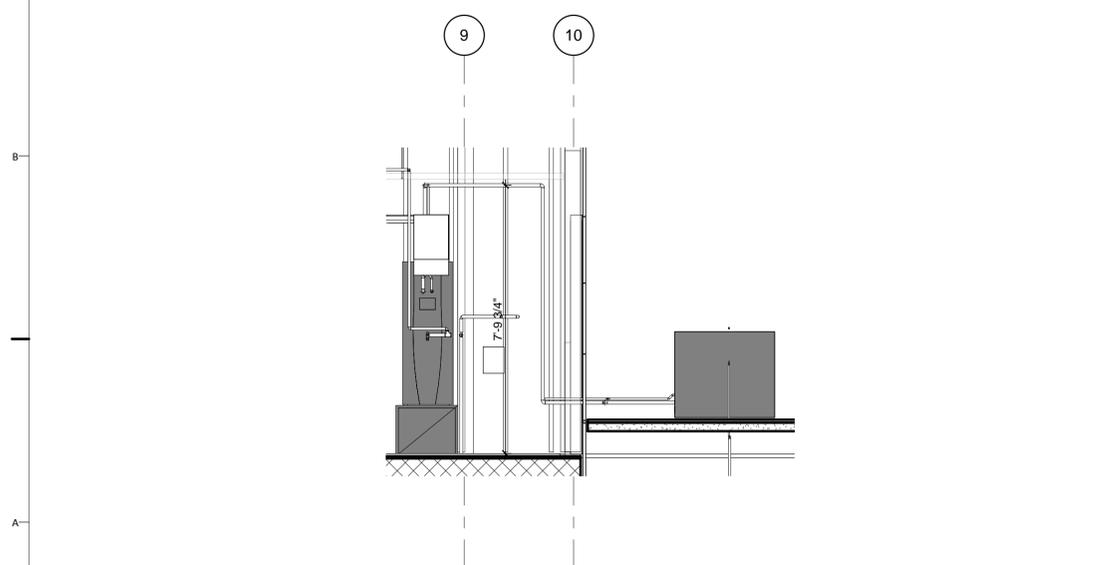


A4 HVAC DUCTING - EAST
1/4" = 1'-0"

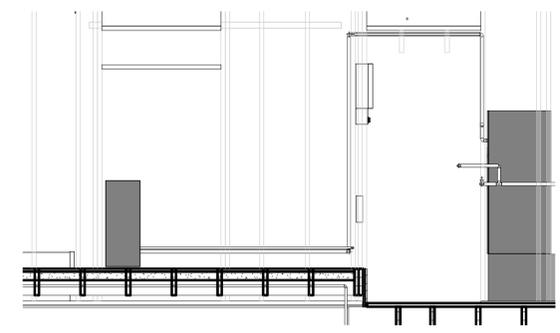




C2 HVAC REFRIGERANT - PLAN
1/2" = 1'-0"



A2 HVAC REFRIGERANT - NORTH
3/8" = 1'-0"



A4 HVAC REFRIGERANT - WEST
3/8" = 1'-0"

GENERAL SHEET NOTES

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**HVAC REFRIGERANT
PLAN AND ELEVATIONS**

M-202

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MECHANICAL SCHEDULE

Mechanical Equipment Schedule															
Mark	Description	Manufacturer	Model	Width	Height	Depth	Diameter	CFM	Static Pressure ("WC)	Efficiency (SEER)	Electrical				
											Amps	Volts	Phase	Watts	# of poles
M01	DAIKIN SKYAIR VERTICAL AIR HANDLER	DAIKIN	FTQ24PBVJU	22	48.125	26	N/A	800	0.5 (max)	19	15	230VAC	1	N/A	N/A
M02	DAIKIN SKYAIR HEAT PUMP		R2Q24PVJU9	35.4375	30.3125	12.625	N/A	1835	N/A		20	230VAC	1	N/A	N/A
M03	DEHUMIDIFYING VENTILATOR, 160 CFM, 70PINT/DAY	ULTRA-AIRE	70H-4029870	28	12	12	N/A	160	N/A	N/A	5.3	120VAC	1	600	1
M04	HAIKU CEILING FAN	BIG ASS FAN	S3150-S1	N/A	9.8	N/A	60	N/A	N/A	N/A	0.363	240VAC	1	30	2
M05	XD ISLAND CHIMNEY RANGE HOOD	XD	XDBI36S	36	31.1875	23.625	N/A	600	N/A	N/A	4	115VAC	N/A	N/A	N/A
M06	ENERGY RECOVERY VENTILATOR	FANTECH	SE704N	10.55	17.25	21.61	N/A	70	N/A	N/A	0.36	115VAC	N/A	40	N/A
M07	REMOVED FROM PROJECT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Duct Accessories												
Mark	Description	Manufacturer	Model	Width	Height	Depth	Diameter	Electrical				
								Amps	Volts	Phase	Watts	
M08	REMOVED FROM PROJECT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M09	REMOVED FROM PROJECT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M10	REMOVED FROM PROJECT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M11	4" WALL CAP (ERV)	AMERICAN ALDES	22 306SS	N/A	N/A	N/A	4	N/A	N/A	N/A	N/A	N/A
M12	REMOVED FROM PROJECT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M13	REMOVED FROM PROJECT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M14	RETURN GRILL	ACCORD	ABRGWH88	8	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M15	RETURN GRILL		ABRGWH2016	20	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M16	REGISTER		ABSWWH284	8	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M17	REGISTER		ABSWWH2108	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A



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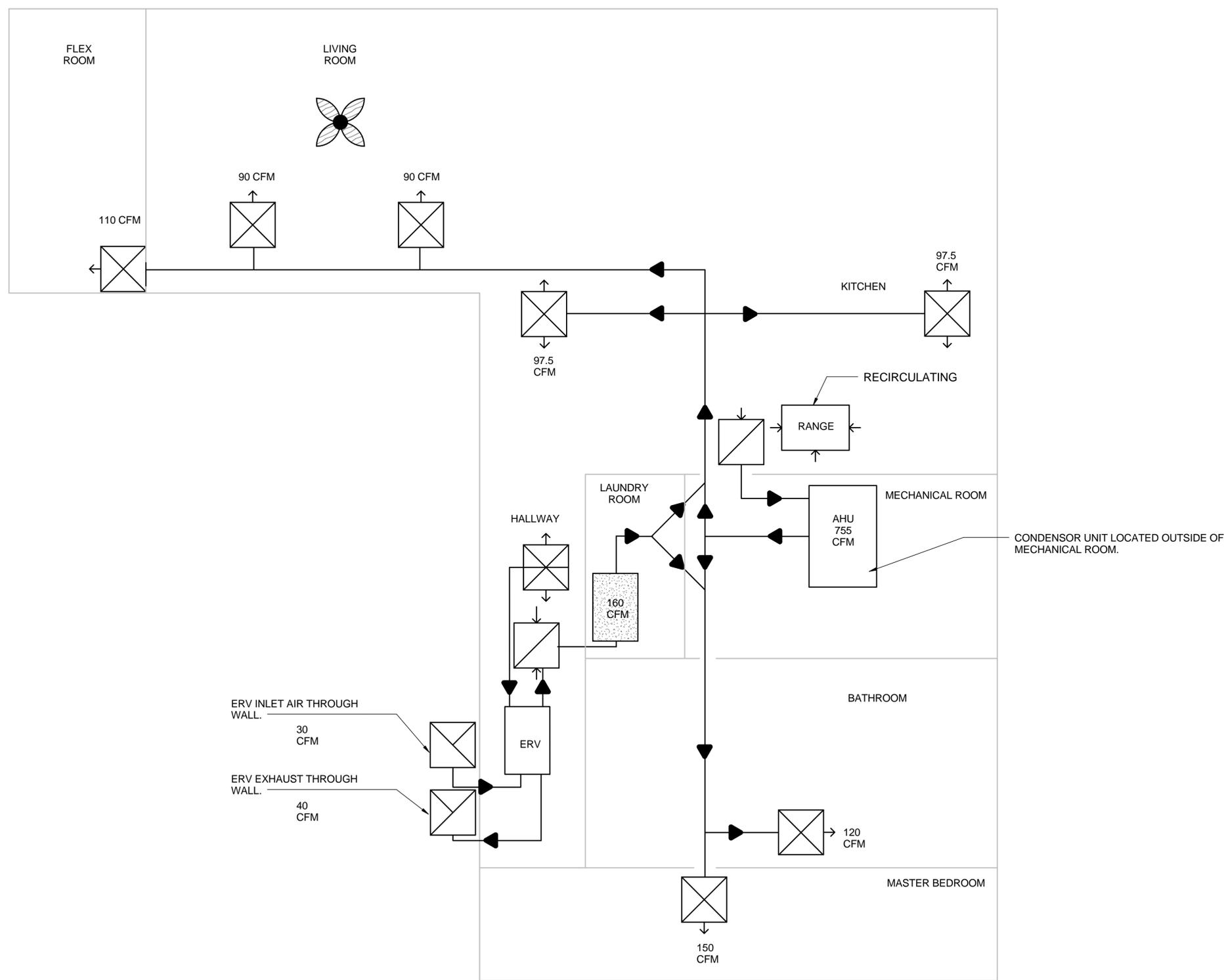
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HVAC DIAGRAMS

M-602



LEGEND

- SUPPLY AIR REGISTER
- RETURN AIR REGISTER
- EXHAUST AIR
- INLET AIR
- DEHUMIDIFIER
- CEILING FAN

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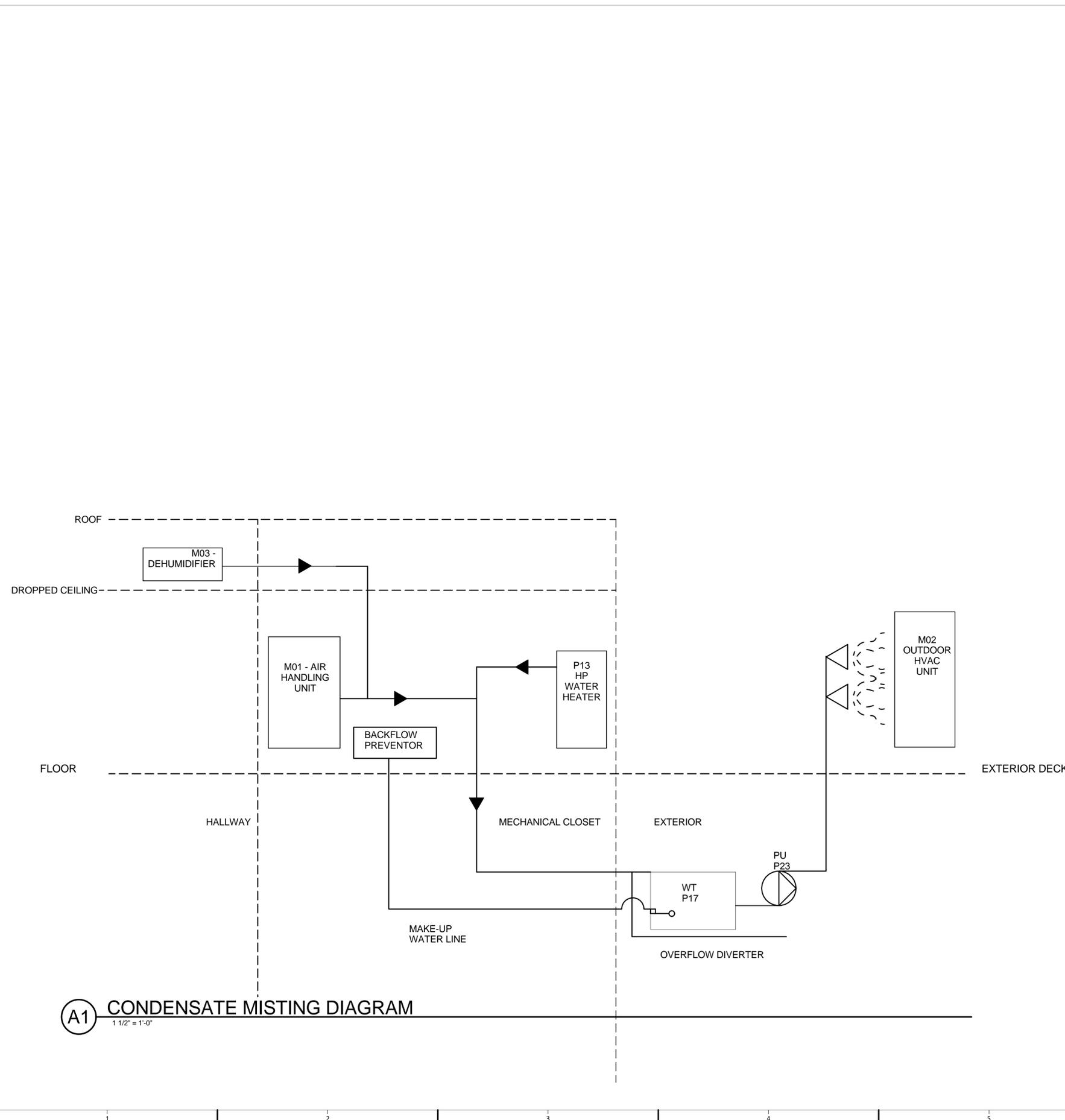
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**CONDENSATE MISTING
DIAGRAM**

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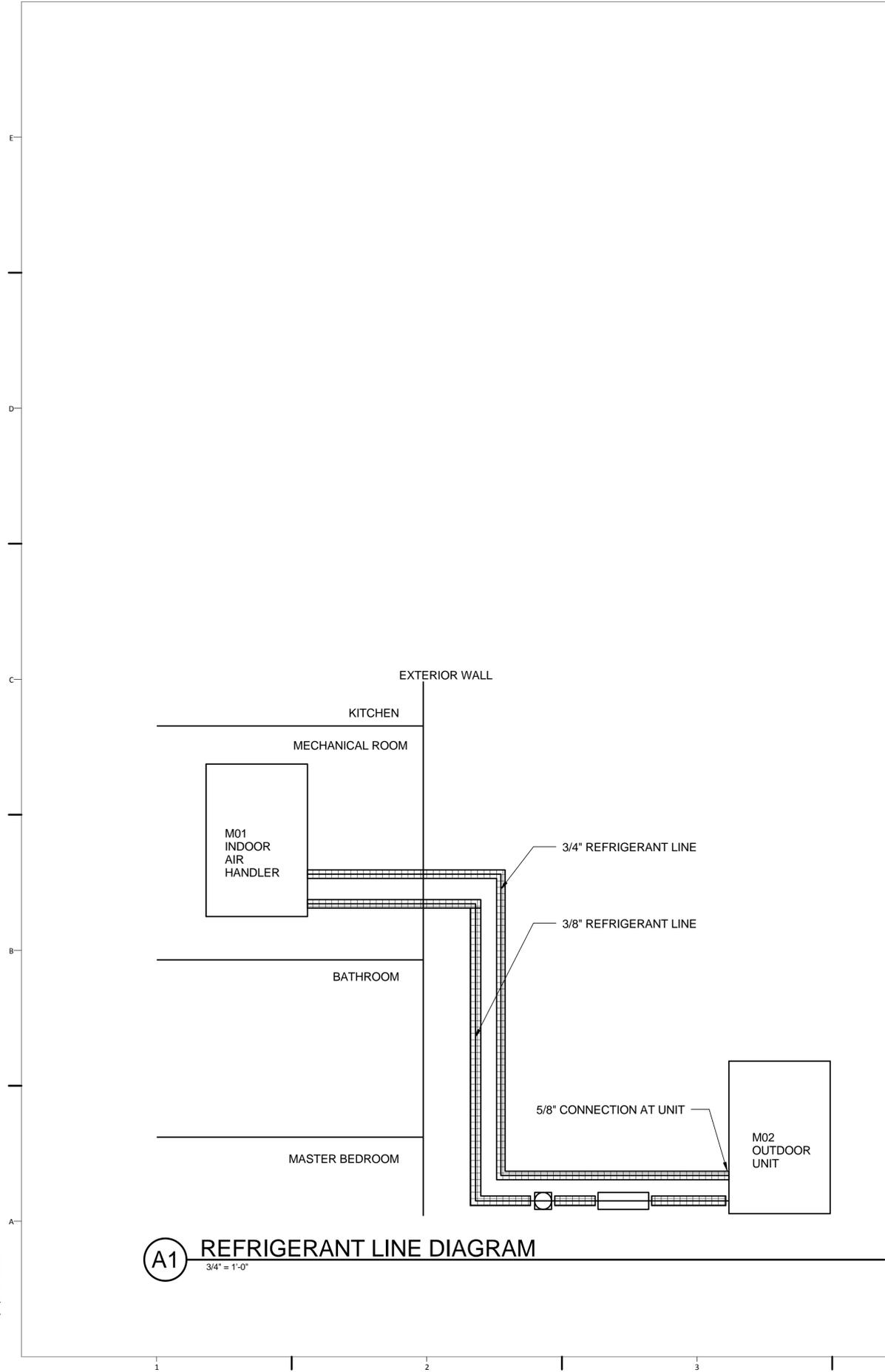


LEGEND

- PUMP
- FLOW DIRECTION
- FLOAT VALVE
- SPRAY NOZZLE

A1 CONDENSATE MISTING DIAGRAM
1 1/2" = 1'-0"

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A1 REFRIGERANT LINE DIAGRAM
 3/4" = 1'-0"

GENERAL SHEET NOTES

- INSULATE REFRIGERANT LINES SEPARATELY.
- USE CLOSED-FOAM CELL 3/4" PIPE INSULATION
- PIPE FITTINGS SHOULD ONLY BE USED WHEN NECESSARY



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LEGEND	
	SIGHT GLASS
	FILTER DRIER
	INSULATION

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**REFRIGERANT LINE
 DIAGRAM**

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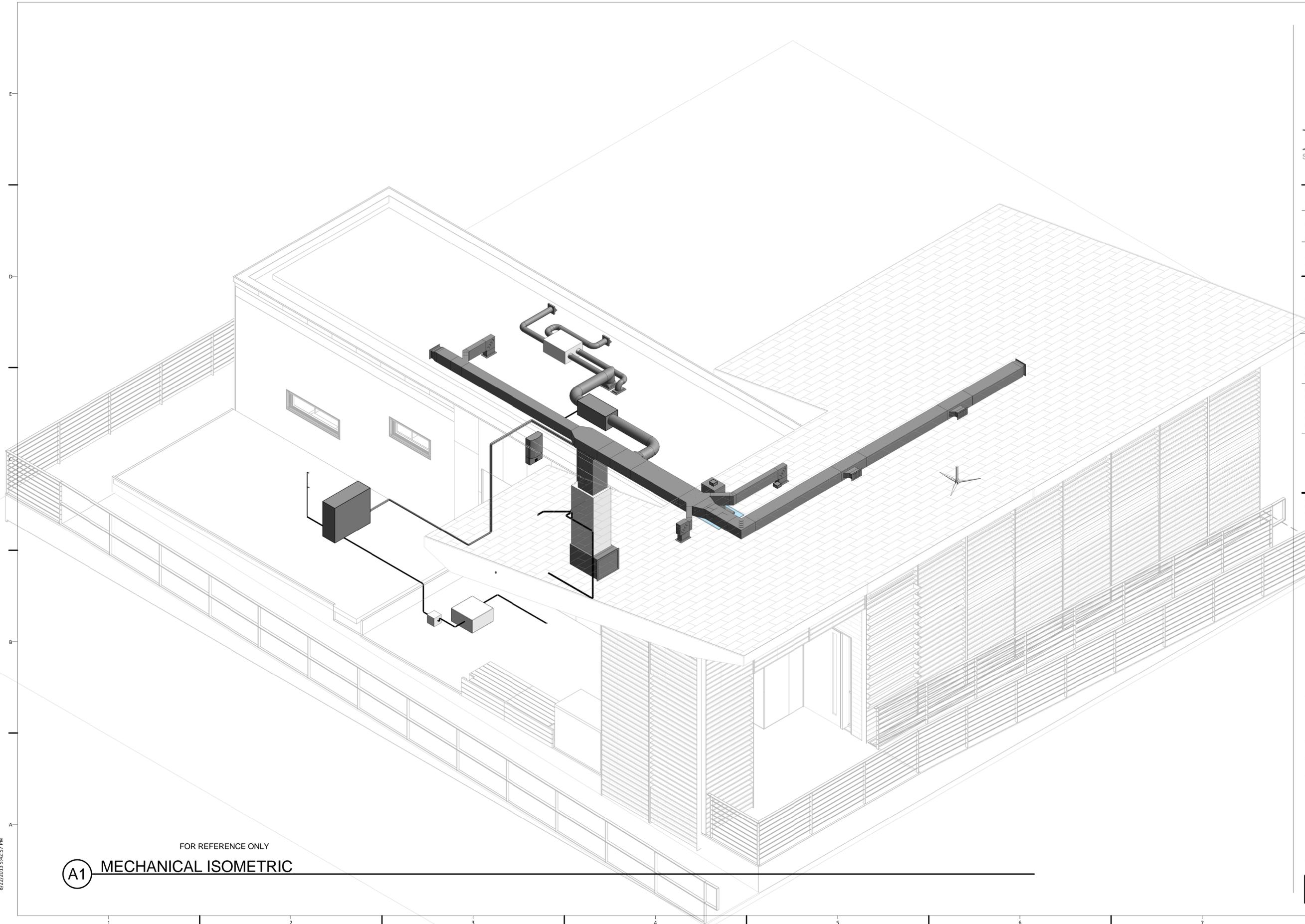


MARK	DATE	DESCRIPTION
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2	NOV 26, 2012	DD RESUBMISSION
3	FEB 14, 2013	CONSTRUCTION DOCUMENTS
4	APR 5, 2013	CD RESUBMISSION
5	AUG 22, 2013	AS-BUILT SUBMISSION

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SHEET TITLE
MECHANICAL ISOMETRIC

M-901



FOR REFERENCE ONLY

A1 MECHANICAL ISOMETRIC

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SYMBOL LEGEND

	120V ABOVE COUNTER DUPLEX RECEPTACLE
	120V DUPLEX RECEPTACLE
	120V USB DUPLEX RECEPTACLE
	120V GFI DUPLEX RECEPTACLE
	240V SINGLE RECEPTACLE
	120V TWO DUPLEX RECEPTACLE
	JUNCTION BOX
	ECOHABIT SENSOR MODULES
	SMOKE/CO2 DETECTOR
	CURRENT TRANSFORMER (CT)
	CIRCUIT BREAKER
	SOLAR SHINGLE
	UTILITY METER
	SINGLE GANG SWITCH
	DOUBLE GANG SWITCH
	TRIPLE GANG SWITCH
	DIMMER SWITCH
	THERMOSTAT
	WIRED CONNECTION
	WIRELESS CONNECTION
	UTILITY METER
	LINE1 LUG
	LINE2 LUG
	NEUTRAL LUG
	GROUND LUG
	DC POSITIVE LUG
	DC NEGATIVE LUG

ABBREVIATION LIST

AC	ALTERNATING CURRENT
AWG	AMERICAN WIRE GAUGE
DC	DIRECT CURRENT
EMT	ELECTRICAL METALIC TUBING - CONDUIT
ERV	ENERGY RECOVERY VENTILATOR
MCB	MAIN CIRCUIT BREAKER
NM-B	NON-METALLIC SHEALTHED CABLE
PV	PHOTOVOLTAIC
THHN	THERMOPLASTIC HIGH HEAT-RESISTANT NYLON-COATED - WIRE INSULATION

SHEET LIST

E-001	ELECTRICAL SYMBOLS AND NOTES
E-101	ELECTRICAL DISTRIBUTION PLAN
E-102	ELECTRICAL HARDWIRED DISTRIBUTION PLAN
E-103	LIGHTING PLAN
E-401	MECHANICAL CLOSET ELEVATIONS
E-601	ONE-LINE DIAGRAM
E-602	THREE-LINE DIAGRAM
E-603	SCHEDULES

ELECTRICAL NOTES

- | | |
|--|---|
| <p>1 ENTIRE INSTALLATION SHALL CONFORM TO N.E.C., NFC AND SOLAR DECATHLON BUILDING CODE</p> <p>2 ANY JUNCTION BOX PULL BOX SHALL BE PROPERLY SIZED ACCORDING TO <u>N.E.C. 314.16</u></p> <p>3 MINIMUM WIRE SIZE FOR AC LOADS SHALL BE #14AWG</p> <p>4 PROVIDE IDENTIFICATION OF ALL BRANCH CIRCUITS ON A TYPEWRITTEN DIRECTORY CARD IN THE PANEL DOOR</p> <p>5 CONDUIT SHALL BE GALVANIZED STEEL RIDGID HEAVY WALL. ELECTRIC-METALLIC TUBING (E.M.T.) WITH WATERTIGHT FITTING OR PVC</p> <p>6 EXCEPT WHERE OTHERWISE INDICATED WIRE SHALL BE COPPER WITH 600 VOLT INSULATION</p> <p>7 ENTIRE INSTALLATION SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST-CLASS WORKMANLIKE MANNER. THE COMPLETE SYSTEM SHALL BE FULLY OPERATIVE</p> | <p>9 MAXIMUM LOAD FOR ALL BRANCH CIRCUITS IS 80%</p> <p>10 COORDINATE WITH EQUIPMENT SUPPLIER FOR ALL FINAL CONNECTION REQUIREMENTS BEFORE INSTALLATION OF CONDUIT WIRE</p> <p>11 BOND WIRE SHALL BE RUN IN ALL CONDUIT WHERE REQUIRED</p> <p>12 GROUND TYPE BUSING SHALL BE USED AS REQUIRED</p> <p>13 FOR ALL LOCATION OF MECHANICAL EQUIPMENT REFER TO MECHANICAL DRAWINGS</p> <p>14 ALL PANEL BOARDS SHALL BE PROVIDED WITH A FACTORY INSTALLED GROUND BUS FOR CONNECTING TO GROUND THE GREEN WIRE IN ALL CONDUITS</p> <p>15 NO "UF" TYPE CONDUCTORS ALLOWED. ALL DROPS TO FIXTURES AND EQUIPMENT SHALL BE DONE IN FLEXIBLE METALLIC CONDUIT EXCEPT AS NOTED. WORK INSIDE DRY WALL PARTITIONS AND HUNG CEILING IS TO BE "EMT"</p> <p>16 CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE. NO PLUG IN CIRCUIT BREAKERS ALLOWED</p> <p>17 USE ELECTRICAL SOCKETS AS SPECIFIED IN THE ELECTRICAL DRAWINGS</p> <p>18 THE CONDUCTOR USED ARE SPECIFIED IN THE ELECTRICAL PLAN AND SHALL COMPLY WITH <u>N.E.C. TABLE 310.15(B)(16)</u></p> <p>19 CABLE BETWEEN PULL BOXES SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) ACCORDING TO N.E.C</p> |
|--|---|

IMPORTANT NOTES

- 1 ALL EXTERIOR OUTLETS MUST BE TYPE GROUND FAULT OR SUPPLIED BY A GROUND FAULT BREAKER
- 2 ALL EXTERIOR OUTLETS MUST HAVE WATERPROOF COVERS AS SPECIFIED IN N.E.C.
- 3 THE PV GROUNDING CABLE SHALL BE THE FIRST TO BE CONNECTED OR DISCONNECTED DURING PV INSTALLATION OR DEINSTALLATION
- 4 ALL INSIDE NON-LOCKING 120V 15 AND 20 AMP CIRCUIT BREAKERS SHALL BE TEMPER RESISTANT AS PER NEC 406.12.
- 5 ALL INSIDE 120V 15 AND 20 AMP CIRCUITS SHALL HAVE AFCI CIRCUIT BREAKER.



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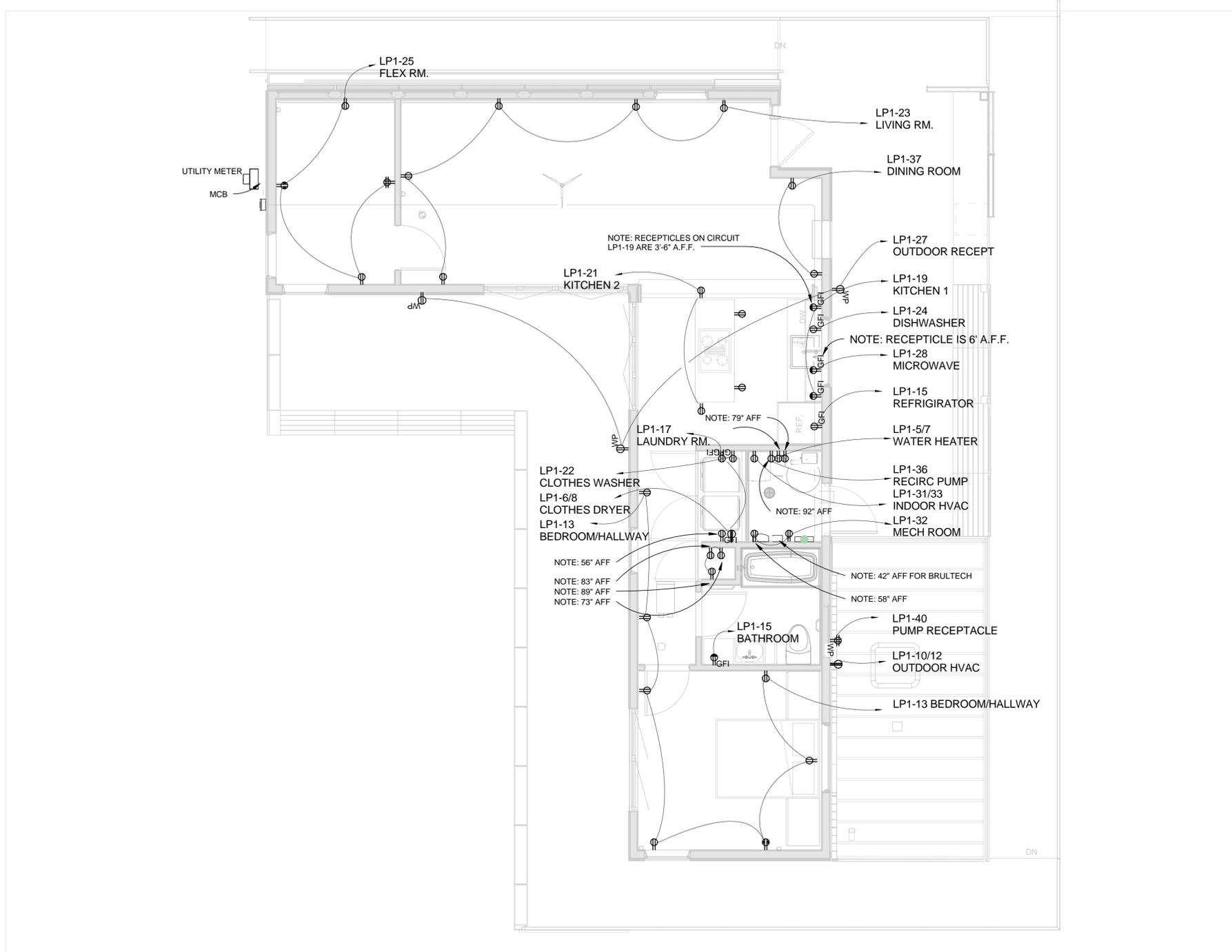
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ELECTRICAL SYMBOLS AND NOTES

E-001

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A1 ELECTRICAL DISTRIBUTION PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

1. INSTALLATION OF ELECTRICAL WIRES, RACEWAYS, AND DEVICES SHALL CONFORM TO THE 2011 NATIONAL ELECTRIC CODE, 2012 INTERNATIONAL RESIDENTIAL CODE OF THE INTERNATIONAL CODE COUNCIL, WITH SPECIFIC PROVISIONS AMENDED AND ALIGNED BY THE 2009 INTERNATIONAL BUILDING CODE AND THE 2013 SOLAR DECATHLON BUILDING CODE.
2. ALL JUNCTION BOXES SHALL BE PROPERLY SIZED ACCORDING TO NEC 314.16.
3. MINIMUM WIRE SIZE SHALL BE #14 AWG.
4. PROVIDE IDENTIFICATION OF ALL BRANCH CIRCUITS ON A TYPEWRITTEN DIRECTORY CARD IN THE PANEL DOOR.
5. EXTERIOR RACEWAYS AND WIRING DEVICES BELOW THE FIRST LEVEL FLOOR SHALL BE SELECTED FOR MECHANICAL PROTECTION. EXTERIOR FITTINGS FOR RACEWAYS SHALL BE COMPRESSION TYPE AND LIQUID TIGHT.
6. EXCEPT WHERE OTHERWISE INDICATED WIRE SHALL BE COPPER WITH 600 VOLT INSULATION. USE TYPE "NM" CABLE WHERE ALLOWED BY CODE.
7. MAXIMUM LOAD FOR ALL BRANCH CIRCUITS IS 80%.
8. FOR MECHANICAL EQUIPMENT DETAIL REFER TO MECHANICAL DRAWINGS AND EQUIPMENT SPECIFICATIONS IN THE PROJECT MANUAL.
9. ALL PANEL BOARDS SHALL BE PROVIDED WITH A FACTORY INSTALLED GROUND BUS FOR CONNECTING TO GROUND THE GREEN OR BARE GROUND WIRE IN ALL CIRCUITS.
10. CONDUCTORS SPECIFIED IN THE ELECTRICAL PLAN SHALL COMPLY WITH NEC TABLE 310.15(B)(16).
11. RACEWAYS BETWEEN PULL BOXES SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (90 DEGREES TOTAL).
12. ALL EXTERIOR RECEPTACLES SHALL BE WEATHER-RESISTANT, GROUND FAULT PROTECTED, AND EQUIPPED WITH "W" USE TYPE WEATHER PROTECTION.
13. THE EQUIPMENT GROUNDING ELECTRODE CONDUCTOR SHALL BE THE FIRST TO BE CONNECTED AND LAST TO BE DISCONNECTED DURING INSTALLATION, DE-INSTALLATION, OR SERVICING OF PHOTOVOLTAIC MODULES AND INVERTERS.
14. 2/0 COPPER POWER CABLES SHALL BE PROVIDED FROM TEAM PANEL BOARD TO ORGANIZER UTILITY PANEL VIA TEAM METER HOUSING.
15. TEAM METER HOUSING SHALL BE PROVIDED TO ACCEPT STANDARD 4-WAY RINGLESS ROUND UTILITY GRADE SOCKET METER FOR 240/120 V SERVICE LOCATED ON THE EXTERIOR FACE OF THE HOUSE.
16. CLEAR INSTALLATION ROUTE FOR ORGANIZER ETHERNET AND POWER CABLES FROM THE ORGANIZER UTILITY PANEL TO THE ORGANIZER ENCLOSURE SHALL BE PROVIDED.
17. TEAM SHALL PROVIDE AN ORGANIZER ENCLOSURE UP TO REQUIRED SPECIFICATIONS AND ALLOW ORGANIZER INSTALLATION CONDUIT AND SENSOR WIRE TO BE INSTALLED.
18. ALL INSIDE NON-LOCKING 120V 15 AND 20 AMP CIRCUIT BREAKERS SHALL BE TEMPER RESISTANT AS PER NEC 406.12.
19. ALL INSIDE 120V 15 AND 20 AMP CIRCUITS SHALL HAVE AFCI CIRCUIT BREAKERS.

DRAWING KEY

- 120V ABOVE COUNTER DUPLEX RECEPTACLE
- 120V DUPLEX RECEPTACLE
- 120V USB DUPLEX RECEPTACLE
- 120V GFI DUPLEX RECEPTACLE
- 240V SINGLE RECEPTACLE
- 120V TWO DUPLEX RECEPTACLE
- 120V JUNCTION BOX
- 240V JUNCTION BOX



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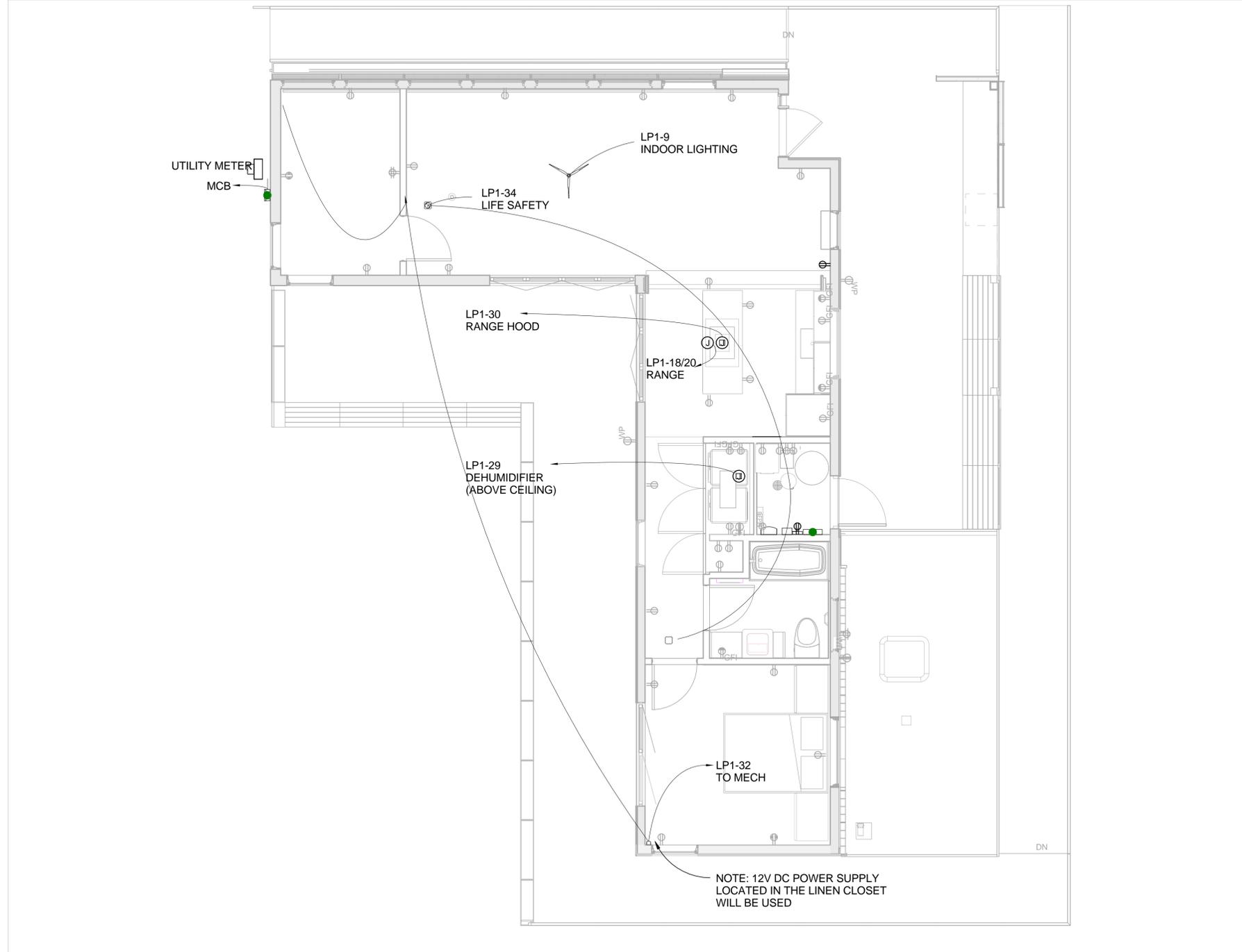
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ELECTRICAL
DISTRIBUTION PLAN

E-101

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A1 ELECTRICAL HARDWIRED DISTRIBUTION PLAN
1/4" = 1'-0"

GENERAL SHEET NOTES

1. INSTALLATION OF ELECTRICAL WIRES, RACEWAYS, AND DEVICES SHALL CONFORM TO THE 2011 NATIONAL ELECTRIC CODE, 2012 INTERNATIONAL RESIDENTIAL CODE OF THE INTERNATIONAL CODE COUNCIL, WITH SPECIFIC PROVISIONS AMENDED AND AUGMENTED BY THE 2009 INTERNATIONAL BUILDING CODE AND THE 2013 SOLAR DECATHLON BUILDING CODE.
2. ALL JUNCTION BOXES SHALL BE PROPERLY SIZED ACCORDING TO NEC 314.16.
3. MINIMUM WIRE SIZE SHALL BE #14 AWG.
4. PROVIDE IDENTIFICATION OF ALL BRANCH CIRCUITS ON A TYPEWRITTEN DIRECTORY CARD IN THE PANEL DOOR.
5. EXTERIOR RACEWAYS AND WIRING DEVICES BELOW THE FIRST LEVEL FLOOR SHALL BE SELECTED FOR MECHANICAL PROTECTION. EXTERIOR FITTINGS FOR RACEWAYS SHALL BE COMPRESSION TYPE AND LIQUIDTIGHT.
6. EXCEPT WHERE OTHERWISE INDICATED WIRE SHALL BE COPPER WITH 600 VOLT INSULATION. USE TYPE "NM" CABLE WHERE ALLOWED BY CODE.
7. MAXIMUM LOAD FOR ALL BRANCH CIRCUITS IS 80%.
8. FOR MECHANICAL EQUIPMENT DETAIL REFER TO MECHANICAL DRAWINGS AND EQUIPMENT SPECIFICATIONS IN THE PROJECT MANUAL.
9. ALL PANEL BOARDS SHALL BE PROVIDED WITH A FACTORY INSTALLED GROUND BUS FOR CONNECTING TO GROUND THE GREEN OR BARE GROUND WIRE IN ALL CIRCUITS.
10. CONDUCTORS SPECIFIED IN THE ELECTRICAL PLAN SHALL COMPLY WITH NEC TABLE 310.15(B)(16).
11. RACEWAYS BETWEEN PULL BOXES SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (90 DEGREES TOTAL).
12. ALL EXTERIOR RECEPTACLES SHALL BE WEATHER-RESISTANT, GROUND FAULT PROTECTED, AND EQUIPPED WITH "R" USE TYPE WEATHER PROTECTION.
13. THE EQUIPMENT GROUNDING ELECTRODE CONDUCTOR SHALL BE THE FIRST TO BE CONNECTED AND LAST TO BE DISCONNECTED DURING INSTALLATION, DE-INSTALLATION, OR SERVICING OF PHOTOVOLTAIC MODULES AND INVERTERS.
14. 20 COPPER POWER CABLES SHALL BE PROVIDED FROM TEAM PANEL BOARD TO ORGANIZER UTILITY PANEL VIA TEAM METER HOUSING.
15. TEAM METER HOUSING SHALL BE PROVIDED TO ACCEPT STANDARD 4-WAY RINGLES, ROUND UTILITY GRADE SOCKET METER FOR 240/120 V SERVICE LOCATED ON THE EXTERIOR FACE OF THE HOUSE.
16. CLEAR INSTALLATION ROUTE FOR ORGANIZER ETHERNET AND POWER CABLES FROM THE ORGANIZER UTILITY PANEL TO THE ORGANIZER ENCLOSURE SHALL BE PROVIDED.
17. TEAM SHALL PROVIDE AN ORGANIZER ENCLOSURE UP TO REQUIRED SPECIFICATIONS AND ALLOW ORGANIZER INSTALLATION CONDUIT AND SENSOR WIRE TO BE INSTALLED.
18. ALL INSIDE NON-LOCKING 120V 15 AND 20 AMP CIRCUIT BREAKERS SHALL BE TEMPER RESISTANT AS PER NEC 408.12.
19. ALL INSIDE 120V 15 AND 20 AMP CIRCUITS SHALL HAVE AFCI CIRCUIT BREAKERS.

DRAWING KEY

- 120V DUPLEX RECEPTACLE
- 120V USB DUPLEX RECEPTACLE
- 120V GFI DUPLEX RECEPTACLE
- 240V SINGLE RECEPTACLE
- 120V TWO DUPLEX RECEPTACLE
- 120V JUNCTION BOX
- 240V JUNCTION BOX
- ECOHABIT SENSOR MODULES
- SMOKE/CO2 DETECTOR



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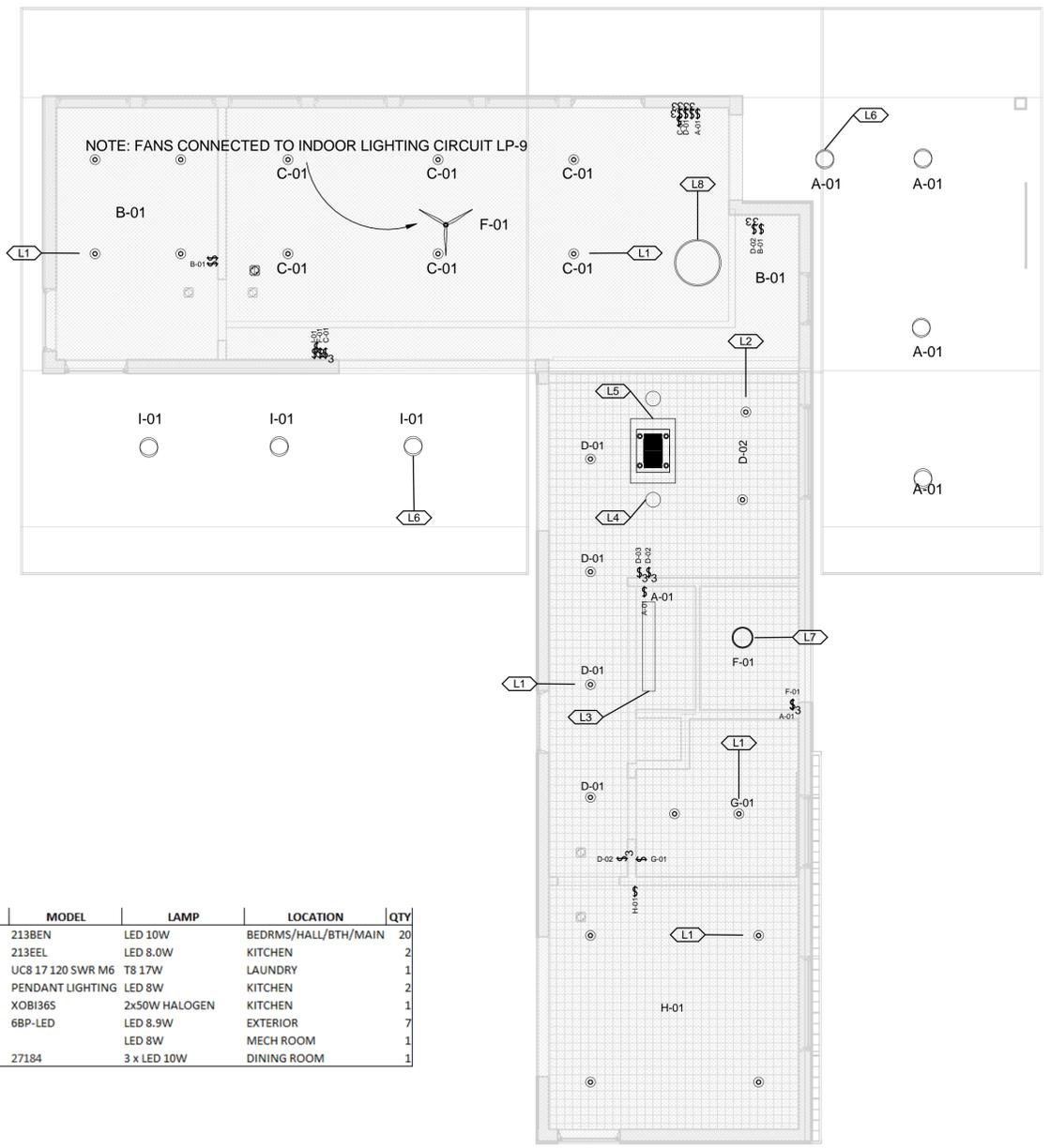
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ELECTRICAL HARDWIRED DISTRIBUTION PLAN

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LIGHTING SCHEDULE

MARK	MANUFACTURER	MODEL	LAMP	LOCATION	QTY
L1	LITHONIA LIGHTING	213BEN	LED 10W	BEDRMS/HALL/BTH/MAIN	20
L2		213EEL	LED 8.0W	KITCHEN	2
L3	LITHONIA LIGHTING	UC8 17 120 SWR M6	T8 17W	LAUNDRY	1
L4	COMMERCIAL ELEC	PENDANT LIGHTING	LED 8W	KITCHEN	2
L5	XO	XOB136S	2x50W HALOGEN	KITCHEN	1
L6	LIGHONIA LIGHTING	6BP-LED	LED 8.9W	EXTERIOR	7
L7	LIGHT BULB		LED 8W	MECH ROOM	1
L8	Sydney 3-Light Polished Nickel Bowl Pendant	27184	3 x LED 10W	DINING ROOM	1

GENERAL SHEET NOTES

- 1 ALL LIGHTING FIXTURES SHALL BE WIRED AS PER N.E.C. ARTICLE 410
- 2 DRY MODULE INDOOR/OUTDOOR LIGHTS LOCATED ON CIRCUIT LP-9
- 3 WET MODULE INDOOR/OUTDOOR LIGHTS LOCATED ON CIRCUIT LP-11

DRAWING KEY



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LIGHTING PLAN



A1 FIRST FLOOR LIGHTING PLAN

1/4" = 1'-0"

E-103



ECOHABIT
STEVENS SOLAR DECATHLON 2013

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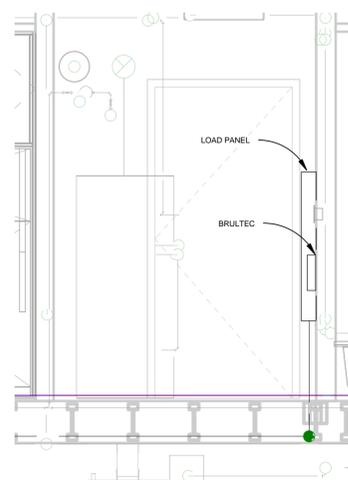


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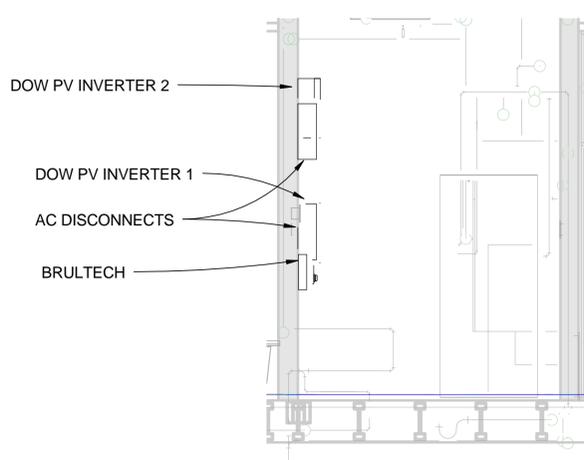
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ELEVATION VIEW

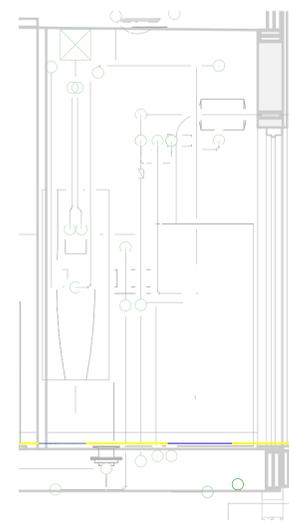
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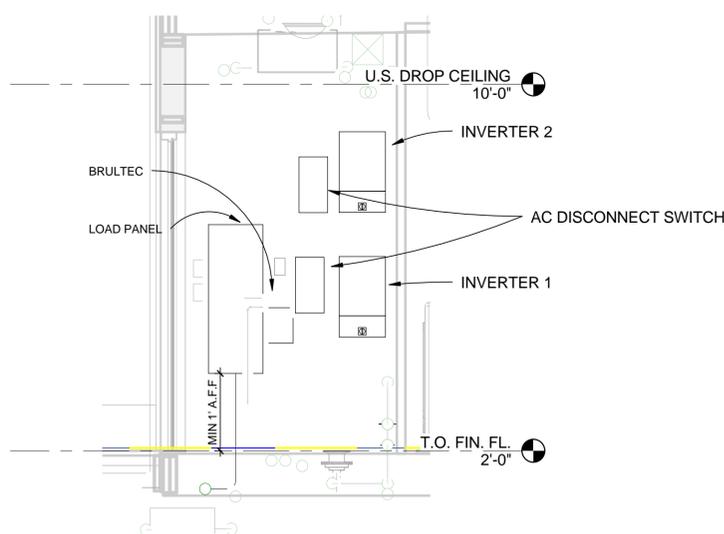
C1 MECHANICAL ROOM - EAST
1/2" = 1'-0"



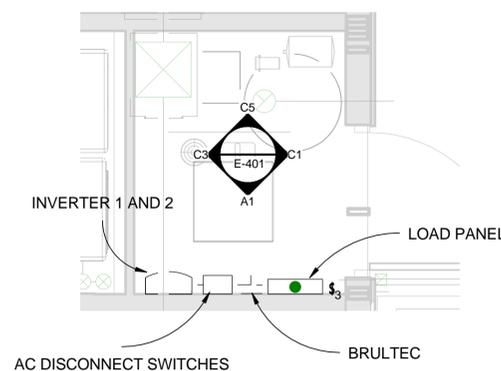
C3 MECHANICAL ROOM - WEST
1/2" = 1'-0"



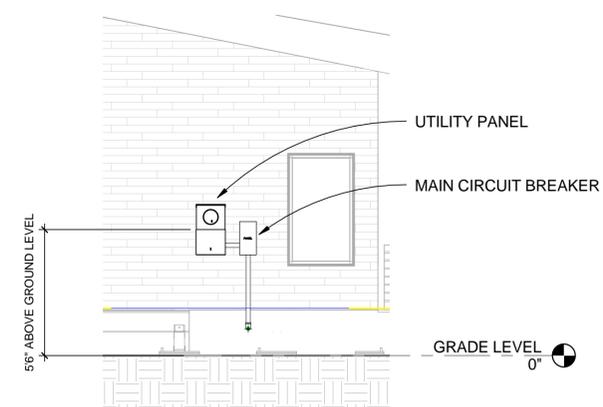
C5 MECHANICAL ROOM - NORTH
1/2" = 1'-0"



A1 MECHANICAL ROOM - SOUTH
1/2" = 1'-0"



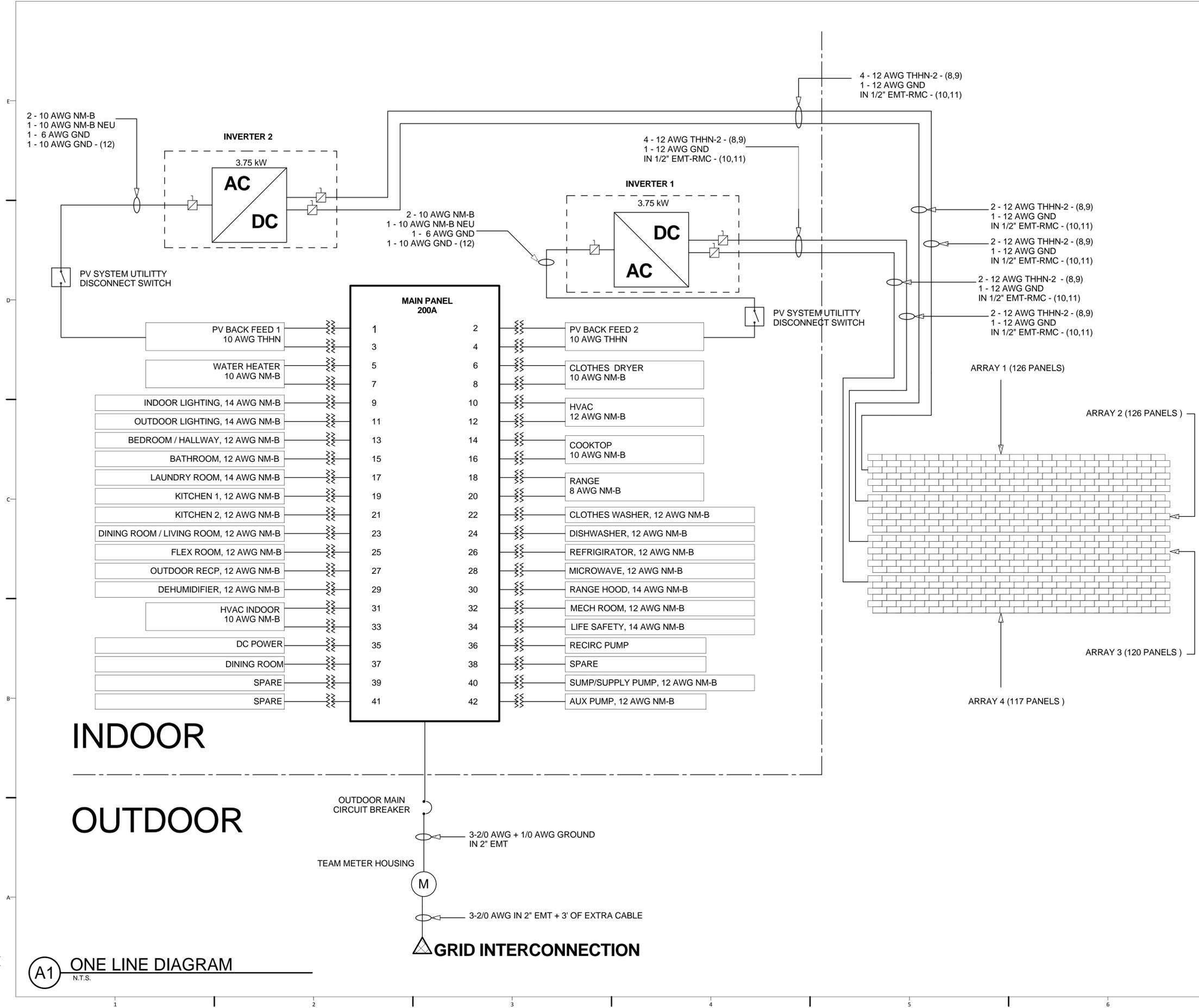
A3 MECHANICAL ROOM
1/2" = 1'-0"



A5 ELEVATION - UTILITY PANEL
1/4" = 1'-0"



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- GENERAL SHEET NOTES
- ALL PANEL BOARDS SHALL BE PROVIDED WITH A FACTORY INSTALLED GROUND BUS FOR CONNECTING TO GROUND THE GREEN OR BARE GROUND WIRE IN ALL CIRCUITS.
 - CONDUCTORS SPECIFIED IN THE ELECTRICAL PLAN SHALL COMPLY WITH NEC TABLE 310.16 AND 310.17.
 - A 15A, 2-POLE CIRCUIT BREAKER IN THE LOAD PANEL SHALL BE PROVIDED FOR ACCESS FROM THE ORGANIZER PANEL.
 - GROUNDING METHOD FROM THE PANEL SHALL DETERMINED IN THE FUTURE.
 - ALL AC ELECTRICAL WIRES ARE THHN
 - AC AND DC DISCONNECTS ARE INCLUDED IN THE INVERTER'S WIRING BOX.
 - THE MAIN CIRCUIT BREAKER SHALL BE SERVICE ENTRANCE RATED.
 - NEGATIVE DC CONDUCTIVE WIRE TO BE GRAY OR WHITE. POSITIVE CONDUCTOR WIRE TO BE BLACK, RED OR BLUE.
 - TBS, SA, FEP, FEFP, MI, RHH, RHW-2, THHN-2, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, OR ZN-2 MAY BE USED WHERE THHN-2 IS DESIGNATED.
 - NEC 690.31(E) ALLOWS TYPE MC CABLES IN LIEU OF FMC, RMC, OR EMT. IF FMC OR MC CABLE IS USED, GUARD STRIPS MUST BE INSTALLED PER 2011 NEC 690.31(E)(2).
 - NEC 690.31(E)(1) SPECIFIES THAT WIRING METHODS SHALL NOT BE INSTALLED WITHIN 25 CM OF ROOF DECKING OR SHEATHING EXCEPT WHERE DIRECTLY BELOW THE ROOF SURFACE COVERED BY PV MODULES AND ASSOCIATED EQUIPMENT. CIRCUITS SHALL BE RUN PERPENDICULAR TO THE ROOF PENETRATION POINTS TO SUPPORT A MINIMUM OF 25 CM. BELOW ROOF DECKING.
 - NEC 690.47(C) REQUIREMENT ONLY.
 - PHOTOVOLTAIC SOURCE AND PV OUTPUT CONDUCTORS, IN AND OUT OF CONDUIT, AND INSIDE OF A BUILDING OR STRUCTURE, SHALL BE ROUTED ALONG BUILDING STRUCTURAL MEMBERS SUCH AS BEAMS, RAFTERS TRUSSES, AND COLUMNS WHERE THE LOCATION OF THOSE STRUCTURAL MEMBERS CAN BE DETERMINED BY OBSERVATION. WHERE CIRCUITS ARE IMBEDDED IN BUILT-UP, LAMINATE, OR MEMBRANE ROOFING MATERIALS IN ROOF AREAS NOT COVERED BY PV MODULES AND ASSOCIATED EQUIPMENT, THE LOCATION OF CIRCUITS SHALL BE CLEARLY MARKED.

- DRAWING KEY
- SYMBOL LEGEND**
- CT CURRENT TRANSFORMER (CT)
 - SOLAR SHINGLE
 - UTILITY METER



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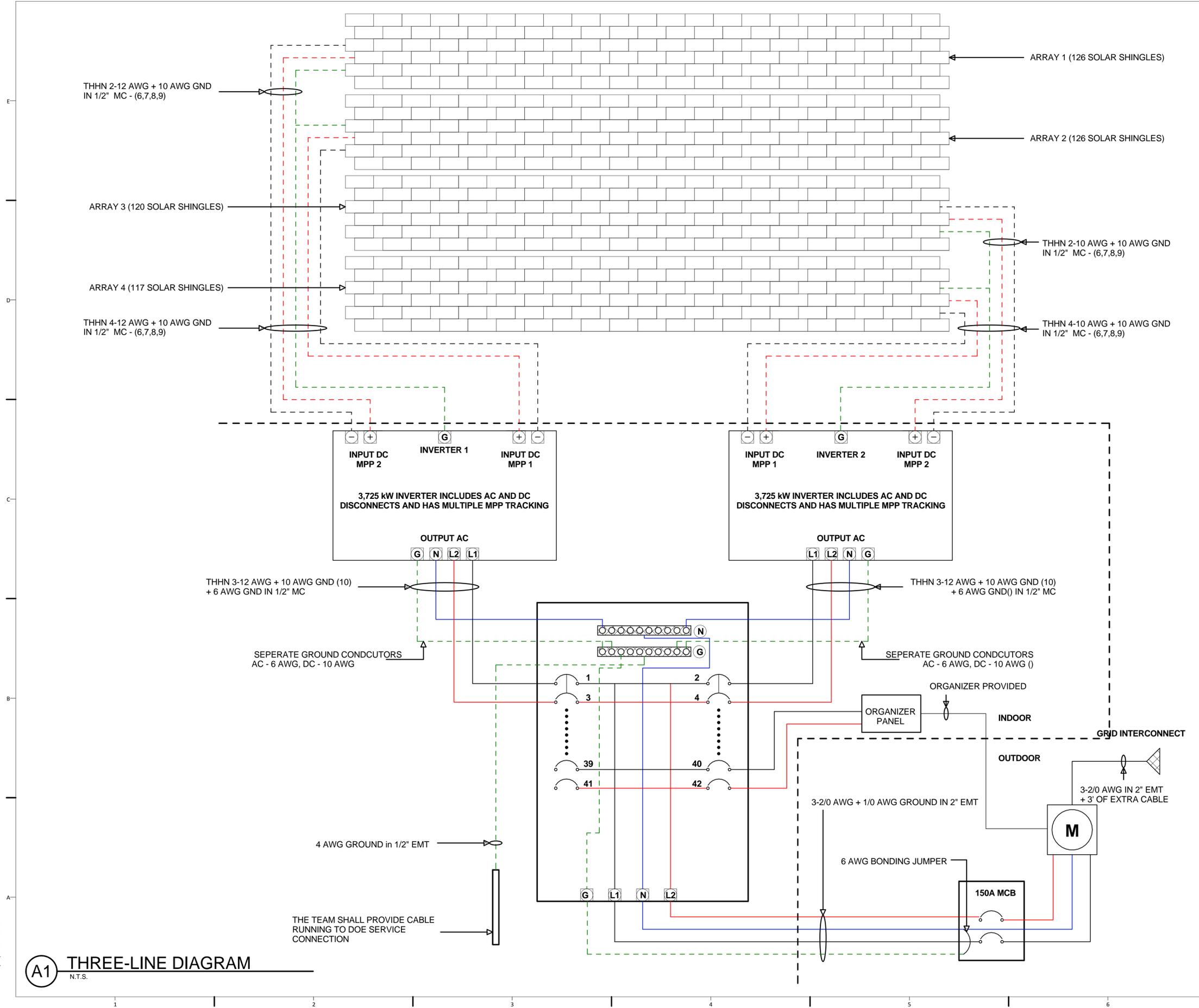
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SHEET TITLE
ONE-LINE DIAGRAM

E-601

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A1 ONE LINE DIAGRAM
N.T.S.



- GENERAL SHEET NOTES
- 1 ALL PANEL BOARDS SHALL BE PROVIDED WITH A FACTORY INSTALLED GROUND BUS FOR CONNECTING TO GROUND THE GREEN OR BARE GROUNDS WIRE IN ALL CIRCUITS.
 - 2 CONDUCTORS SPECIFIED IN THE ELECTRICAL PLAN SHALL COMPLY WITH NEC TABLE 310.15(B)(16).
 - 3 A 15A, 2-POLE CIRCUIT BREAKER IN THE LOAD PANEL SHALL BE PROVIDED FOR ACCESS FROM THE ORGANIZER PANEL.
 - 4 GROUNDING CABLE SHALL BE PROVIDED TO THE ORGANIZER SERVICE.
 - 5 PANELS ARE SNAPPED TOGETHER TO FORM A STRING, AT THE END OF THE STRING A SINGLE PENETRATION THROUGH THE ROOF TO THE INSIDE IS CREATED FOR THE CONDUCTORS. A JUNCTION BOX IS LOCATED ON THE INSIDE OF THE ROOF FROM WHERE WIRES GO INTO THE EMT.
 - 6 NEGATIVE DC CONDUCTIVE WIRE TO BE GRAY OR WHITE. POSITIVE CONDUCTOR WIRE TO BE BLACK, RED OR BLUE.
 - 7 TBS, SA, FEP, FEPP, MI, RHH, RHW-2, THHN-2, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, OR ZW-2 MAY BE USED WHERE THHN-2 IS DESIGNATED.
 - 8 NEC 690.31(E) ALLOWS TYPE MC CABLES IN LIEU OF FMC, RMC, OR EMT. IF FMC OR MC CABLE IS USED, GUARD STRIPS MUST BE INSTALLED PER 2011 NEC 690.31(E)(2).
 - 9 NEC 690.31(E)(1) SPECIFIES THAT WIRING METHODS SHALL NOT BE INSTALLED WITHIN 25 CM OF ROOF DECKING OR SHEATHING EXCEPT WHERE DIRECTLY BELOW THE ROOF SURFACE COVERED BY PV MODULES AND ASSOCIATED EQUIPMENT. CIRCUITS SHALL BE RUN PERPENDICULAR TO THE ROOF PENETRATION POINTS TO SUPPORT A MINIMUM OF 25 CM. BELOW ROOF DECKING.
 - 10 NEC 690.47(C) REQUIREMENT ONLY.
 - 11 PHOTOVOLTAIC SOURCE AND PV OUTPUT CONDUCTORS, IN AND OUT OF CONDUIT, AND INSIDE OF A BUILDING OR STRUCTURE, SHALL BE ROUTED ALONG BUILDING STRUCTURAL MEMBERS SUCH AS BEAMS, RAFTERS TRUSSES, AND COLUMNS WHERE THE LOCATION OF THOSE STRUCTURAL MEMBERS CAN BE DETERMINED BY OBSERVATION. WHERE CIRCUITS ARE IMBEDDED IN BUILT-UP LAMINATE, OR MEMBRANE ROOFING MATERIALS IN ROOF AREAS NOT COVERED BY PV MODULES AND ASSOCIATED EQUIPMENT, THE LOCATION OF CIRCUITS SHALL BE CLEARLY MARKED.

- DRAWING KEY
- WIRE LEGEND**
- L1
 - L2
 - NEUTRAL
 - - POSITIVE
 - - NEGATIVE
 - - GROUND
- SYMBOL LEGEND**
- ⤵ CIRCUIT BREAKER
 - ☐ SOLAR SHINGLE
 - Ⓜ UTILITY METER
 - Ⓛ1 LINE1 LUG
 - Ⓛ2 LINE2 LUG
 - Ⓝ NEUTRAL LUG
 - Ⓞ GROUND LUG
 - Ⓟ DC POSITIVE LUG
 - Ⓠ DC NEGATIVE LUG



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THREE-LINE DIAGRAM

E-602

A1 THREE-LINE DIAGRAM
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PANEL:		LOAD PANEL 1	MLO	LOCATION: MECHANICAL ROOM													
VOLTAGE:		120/240VAC	BUS RATING: 200A														
#	POLE	TRIP	LOAD DESCRIPTION	AMPS	VA	Wire Size	CKT	1	2	CKT	Wire Size	VA	AMPS	LOAD DESCRIPTION	TRIP	POLE	#
LP-1			PV BACK FEED 1	16	3500	10	1			2		3500	16	PV BACK FEED 2	20	2	LP-2
LP-3	2	20					3			4	10						LP-4
LP-5			WATER HEATER	21	5000	10	5			6	10	5000	21	CLOTHES DRYER	30	2	LP-6
LP-7	2	30					7			8							LP-8
LP-9	1	15*	LIGHTING 1	3	360	14	9			10	12	1400	6	HVAC	20	2	LP-10
LP-11	1	15*	LIGHTING 2	1	100	14	11			12							LP-12
LP-13	1	15*	BEDROOM / HALLWAY	10.5	1260	12	13			14	10	4100	20	OVEN	30	2	LP-14
LP-15	1	20	BATHROOM	12.5	1500	12	15			16							LP-16
LP-17	1	15	LAUNDRY ROOM	3	360	14	17			18	8	7100	30	RANGE	40	2	LP-18
LP-19	1	20	KITCHEN 1	12.5	1500	12	19			20							LP-20
LP-21	1	20	KITCHEN 2	14	1680	12	21			22	12	180	1.5	CLOTHES WASHER	15	1	LP-22
LP-23	1	20*	DINING ROOM / LIVING ROOM	13.5	1620	12	23			24	12	240	2	DISHWASHER	15	1	LP-24
LP-25	1	15*	FLEX ROOM	9	1080	12	25			26	12	180	1.5	REFRIGERATOR	15*	1	LP-26
LP-27	1	20	OUTDOOR RECP.	18.75	3000	10	27			28	12	1500	12.5	MICROWAVE	20	1	LP-28
LP-29	1	15*	DEHUMIDIFIER	5	600	12	29			30	14	480	4	RANGE HOOD	15*	1	LP-30
LP-31	-	-	SPARE	-	-	-	31			32	12	360	3	MECH ROOM	20*	1	LP-32
LP-33	-	-	SPARE	-	-	-	33			34	14	360	3	LIFE SAFETY	20*	1	LP-34
LP-35	1	20	DC POWER	2.5	300	14	35			36	14	600	5	RECIRC PUMP	20	2	LP-36
LP-37	1	20	DINING ROOM	3	360	14	37			38	-	-	-	SPARE			LP-38
LP-39	2	-	SPARE	-	-	-	39			40	12	1200	10	MAIN PUMP/SUMP PUMP	20	1	LP-40
LP-41	-	-	SPARE	-	-	-	41			42	12	1200	10	AUX. PUMPS	20	1	LP-42

*INDICATES AFCI BREAKER **INDICATES GFCI BREAKER

NEC 2011, ARTICLE 220 FEEDER AND SERVICE LOAD CALCULATIONS MAIN SERVICE	
1. GENERAL LIGHTING LOAD	980sqft @ 3VA/sqft = 2940 VA
2. LIGHTING BRANCH CIRCUIT	(2940VA/120V)=24.5A ==> 2*15A BRANCH CIRCUIT
3. OTHER RECEPTACLE CIRCUITS	SMALL APPLIANCE CIRCUITS 4 @ 1500 VA = 6000 VA LAUNDRY CIRCUITS 1 @ 1500 VA = 1500 VA
4. OTHER LOADS	65% RANGE 1 @ 7100VA = 4615 VA 65% OVEN 1 @ 4100VA = 2665 VA CLOTHES DRYER 1 @ 5000VA = 5000 VA 125% OF MAIN WATER PUMP 1 @ 8A*240V = 2400 VA 125% SUMP PUMP 1 @ 5A*120 = 750 VA WATER HEATER 1 @ 25A*240 = 6000 VA ERV 1 @ 0.2A*240 = 48 VA DEHUMIDIFIER 1 @ 5A*120 = 600 VA RANGE HOOD 1 @ 4A*120 = 480 VA
5. AUXILIARY PUMPS	125% CONDENSATE PUMP 1 @ 5A*120 = 750 VA RAIN WATER PUMP 1 @ 4A*120 = 480 VA HOUSE RECIRCULATION PUMP 1 @ 1A*120 = 120 VA
6. GENERAL SUBTOTAL 1+2+4+5	SUBTOTAL 34348 VA FIRST 10KVA @ 100% 10000 VA REMAINING LOAD @ 40% 9739 VA SUM 19739 VA
7. HEATING AND AIR-CONDITIONING	INDOOR UNIT 1 @ 3A*240 = 720 VA OUTDOOR UNIT 1 @ 2.8A*240 = 672 VA SUM 1392 VA
8. TOTAL POWER 6+7	SUBTOTAL 21131 VA SERVICE AMPACITY 21131VA / 240VA 88.047 A SELECT SERVICE SIZE 150 A
9. CONDUCTOR SIZE	AS PER NEC 310.15(b)(16) USE THWN-2, 75 DEEGREES C AS PER NEC 310.15(2)(b), CORRECTION FACTOR 0.93 150A / 0.93 = 161.3 A 75 DEEGREES C RATING, SELECT #2/0 THWN-2 WHERE CONCEALED INSIDE STRUCTURE 30 DEEGREES C AMBIENT, SELECT #1/0 THWN

NEC 2011, ARTICLE 220 FEEDER AND SERVICE NEUTRAL LOAD MAIN SERVICE	
1. GENERAL LIGHTING LOAD	980sqft @ 3VA/sqft = 2940 VA
2. LIGHTING BRANCH CIRCUIT	(2940VA/120V)=24.5A ==> 2*15A BRANCH CIRCUIT
3. OTHER RECEPTACLE CIRCUITS	SMALL APPLIANCE CIRCUITS 4 @ 1500 VA = 6000 VA LAUNDRY CIRCUITS 1 @ 1500 VA = 1500 VA
4. OTHER LOADS	70% (65% RANGE) 1 @ 7100VA = 3231 VA 70% (65% OVEN) 1 @ 4100VA = 1866 VA 70% CLOTHES DRYER 1 @ 5000VA = 3500 VA 125% OF MAIN WATER PUMP 1 @ 8A*240V = 2400 VA 125% SUMP PUMP 1 @ 5A*120 = 750 VA WATER HEATER 1 @ 25A*240 = 6000 VA ERV 1 @ 0.2A*240 = 48 VA DEHUMIDIFIER 1 @ 5A*120 = 600 VA RANGE HOOD 1 @ 4A*120 = 480 VA
5. AUXILIARY PUMPS	125% CONDENSATE PUMP 1 @ 5A*120 = 750 VA RAIN WATER PUMP 1 @ 4A*120 = 480 VA HOUSE RECIRCULATION PUMP 1 @ 1A*120 = 120 VA
6. GENERAL SUBTOTAL 1+2+4+5	SUBTOTAL 30664 VA FIRST 10KVA @ 100% 10000 VA REMAINING LOAD @ 40% 8266 VA SUM 18266 VA
7. HEATING AND AIR-CONDITIONING	AIR HANDLER 1 @ 3A*240 = 720 VA HEAT PUMP 1 @ 2.8A*240 = 672 VA SUM 1392 VA
8. TOTAL POWER 6+7	SUBTOTAL 19658 VA SERVICE AMPACITY 19658VA / 240VA 81.907 A SELECT SERVICE SIZE 150 A
9. CONDUCTOR SIZE	AS PER NEC 310.15(b)(16) USE THWN-2, 75 DEEGREES C AS PER NEC 310.15(2)(b), CORRECTION FACTOR 0.93 150A / 0.93 = 161.3 A 75 DEEGREES C RATING, SELECT #2/0 THWN-2 WHERE CONCEALED INSIDE STRUCTURE 30 DEEGREES C AMBIENT, SELECT #1/0 THWN

NEC 2011, ARTICLE 250.66 FEEDER AND SERVICE GROUNDING MAIN SERVICE	
1. GROUNDING ELECTRODE CONDUCTOR	BASED ON #2/0 SELECT #4 COPPER GROUND

NEC 2011, ARTICLE 250.80 FEEDER AND SERVICE ENCLOSURE MAIN SERVICE	
1. CONDUIT SIZE	AS PER NEC TABLE C.8 CONDUIT SIZE 2"

NEC 2011, ARTICLE 690 PV STRING CALCULATION	
1. ARRAY SPECIFICATIONS	1.1 TOTAL # OF PANELS 489 1.2 # OF STRINGS 4 1.3 # OF PANELS PER STRING 489 / 4 122.25
2. PANEL SPECIFICATIONS	2.1 POWER 12 W* 2.2 Voc 3.1 V* 2.3 Vmpp 2.1 V* 2.4 Isc 6.3 A* 2.5 Imp 5.4 A* 2.6 β _{Voc} %/°C -0.31 /°C -0.0031 2.7 γ _{Vmp} %/°C -0.4 /°C -0.004 2.8 β _{Voc} V/C -0.0031/C * 3.1V = -0.0096 V/C 2.9 γ _{Vmp} V/C -0.0040/C * 2.1V = -0.0084 V/C
3. TEMPERATURE SPECIFICATIONS	3.1 Average High °C °C 29 3.2 Average Low °C °C 8 3.3 Record Low °C °C -4
4. STRING CALCULATIONS	V _{mp_low} = 1.3*[2.3+(3.1-25)*2.9] 252.62 V** V _{mp_high} = 1.3*[2.3+(3.2-25)*2.9] 274.18 V** **MUST BE WITHIN INVERTER V _{mp} RANGE INVERTER SPEC 150-420VDC GOOD Voc = 1.3*[2.5+(3.3-25)*2.8] 413 V*** ***MUST BE BELOW INVERTER DC MAX INVERTER SPEC 550VDC GOOD I _{max} 6.3A * 1.56 = 9.83 A**** ****MUST BE BELOW INVERTER CURRENT MAX INVERTER SPEC 16A GOOD
5. WIRE CALCULATIONS	STRING MAX OUPUT CURRENT 6.3 A STRING REQUIRED AMPACITY 6.3A * 1.56 = 9.83 A AS PER NEC 310.15(b)(16) THHN-2 10 AWG INVERTER MAX OUTPUT CURRENT 16 A INVERTER REQUIRED AMPACITY 20 A AS PER NEC 310.15(b)(16) THHN-2 10 AWG GROUDNING CONDUCTOR BARE CU 10 AWG <i>*SOLAR POWERHOUSE SHINGLE SPECIFICATION</i>

STANDARD METHOD WAS USED FOR THE CALCULATIONS



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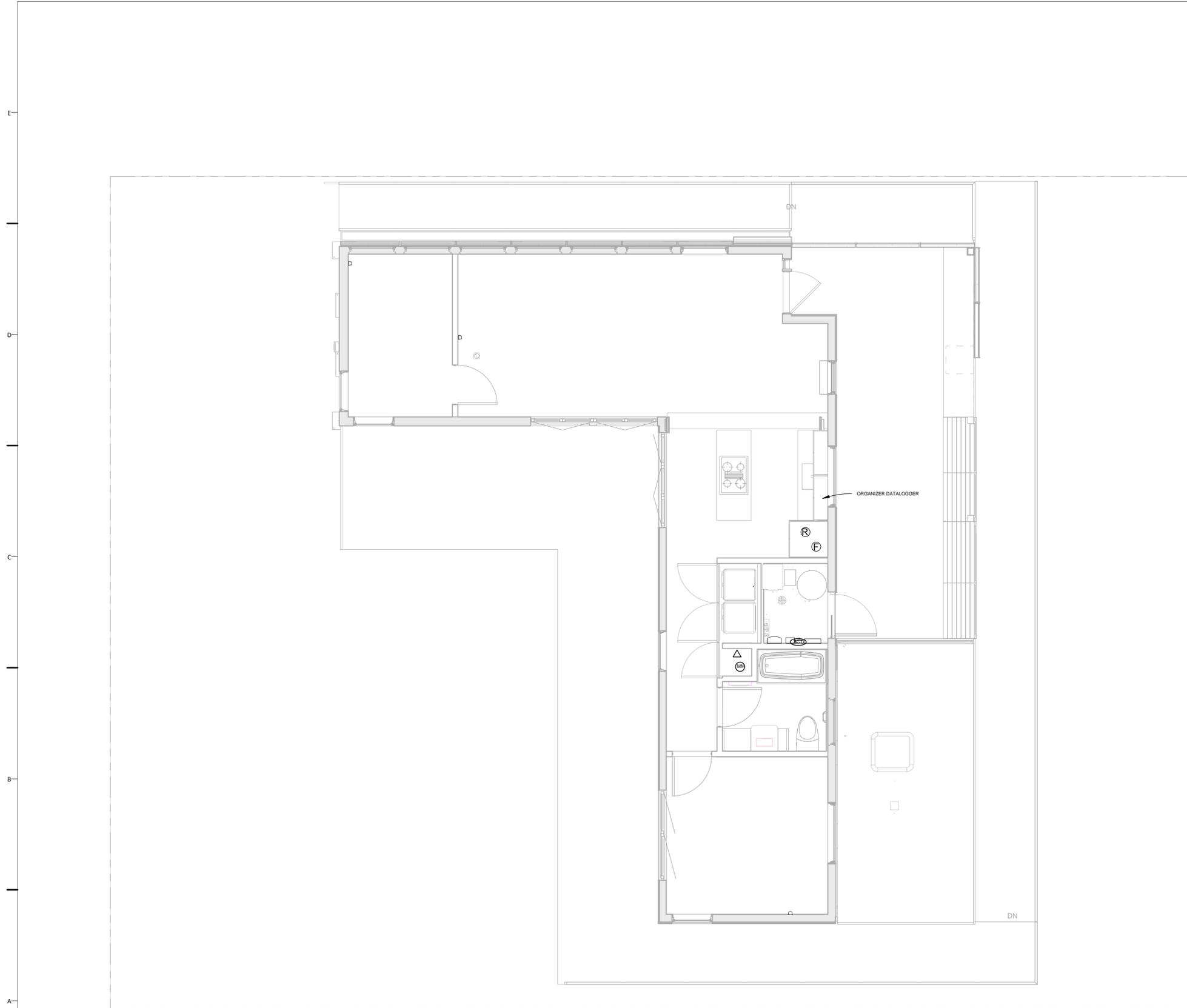
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SCHEDULES

E-603

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GENERAL SHEET NOTES

- 1 ANY PENETRATIONS THROUGH WALLS FOR THE ORGANIZER EQUIPMENT SHALL BE MINIMUM 1" CLEAR INSIDE DIAMETER AS SPECIFIED

DRAWING KEY

- PCB MASTER MODULE
- PCB SLAVE AMBIENT
- PCB SLAVE CURRENT TRANSFORMERS
- SPONSOR PROVIDED REFRIGERATOR TEMP. SENSOR
- SPONSOR PROVIDED FREEZER TEMP. SENSOR
- ETHERNET AND CABLE
- PCB SLAVE CURRENT MODULE



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TELECOMMUNICATIONS
WIRING PLAN

T-101

(A1) TELECOM WIRING DIAGRAM
1/4" = 1'-0"

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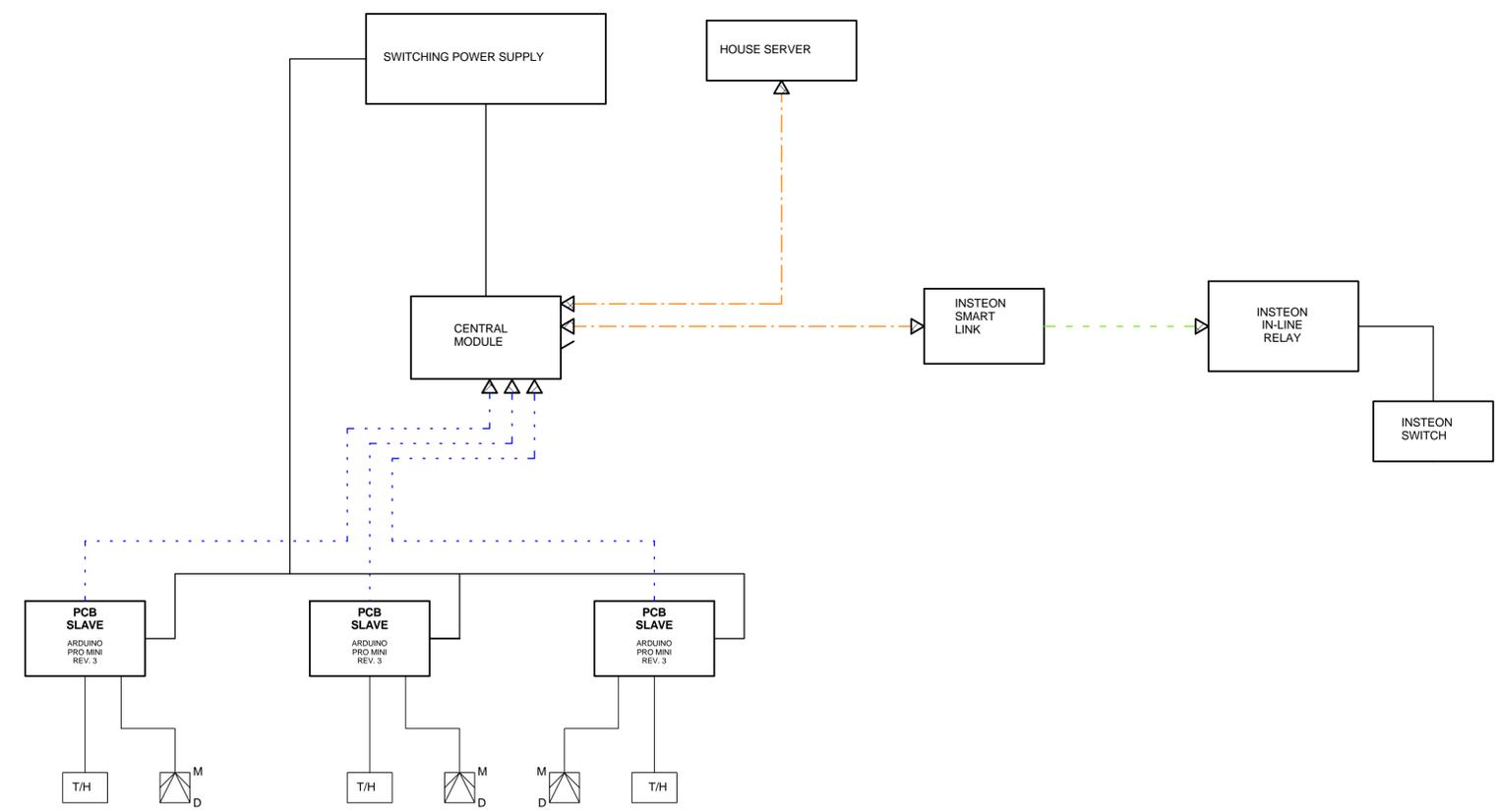
DATA WIRING DIAGRAMS

T-602

GENERAL SHEET NOTES

NAME	DESCRIPTION	MANUFACTURER	MODEL NUMBER	LOCATION	QUANTITY
POWER SUPPLY	12V	XP-POWER	DNR10US05	LINEN CLOSET	1
POWER SUPPLY	5V	XP-POWER	DNR18US12	LINEN CLOSET	1
PCB MASTER	MAIN DATA HUB	ARDUINO	PRO MINI 5V	LINEN CLOSET	1
PCB SLAVE AMBIENT	MONITORS: T,H, MOTION	ARDUINO	PRO MINI 5V	BED ROOM/FLEX/ MAIN ROOM	3
TEMPERATURE/HUM SENSOR	MEASURE TEMPERATURE AND HUMIDITY	SENSIRON	SHT75	PCB SLAVE AMBIENT	3
MOTION SENSOR	DUAL TECHNOLOGY MOTION SENSOR FOR OCCUPANCY	DUAL TECHNOLOGY	DT7435	PCB SLAVE AMBIENT	3
MAIN CT SENSOR	OVERALL POWER DRAW TO PANEL	BRULTECH	GREENEYE	MECH CLOSET	1
CT LINE SENSOR	POWER DRAW TO EACH CIRCUIT	BRULTECH	MICRO-40	MECH ROOM	29
XBEE TRANSMITTER	COMMUNICATED BETWEEN PCB MODULES	XBEE	VER 1 (802.15.4)	PCB MODULES	1
INSTEON MAIN HUB	CONTROLS POWER TO THE LIGHTS	INSTEON	SMARTLINK HUB #2412N	LINEN CLOSET	1
INSTEON INLINE RELAY	LIGHT SWITCH	INSTEON	IN-LINE LINC #247S5DB	LIGHT SWITCHES	14
HOUSE SERVER	COMPUTER FOR DATA PROCESSING	APPLE	MAC MINI	LINEN CLOSET	1

D2 TELECOMMUNICATION SCHEDULE
N.T.S.



DRAWING KEY

- LINE LEGEND**
- SERIAL COMMUNICATION (dashed orange line)
 - RF COMMUNICATION (dotted green line)
 - X-BEE COMMUNICATION (dotted blue line)

- SYMBOL LEGEND**
- T/H: TEMP. / HUM. SENSOR
 - L: LIGHT INTENSITY SENSOR
 - M: MOTION SENSOR

A1 DATA WIRING DIAGRAM
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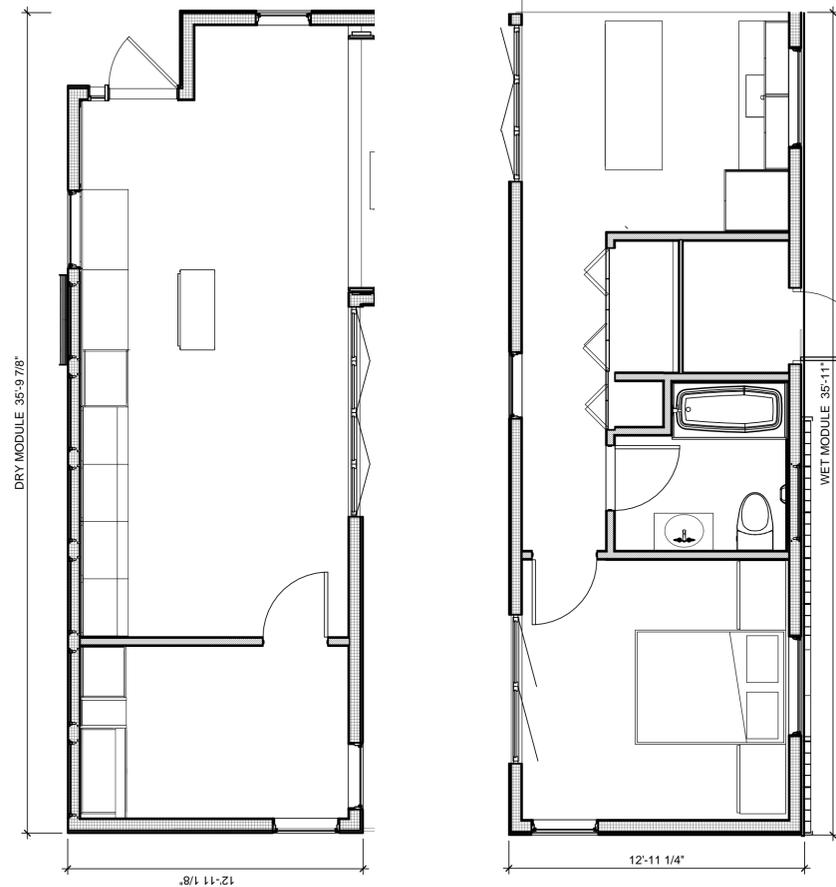
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SHEET TITLE
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NOTES

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TRANSPORTATION NOTES

DEPARTURE POINT : HOBOKEN, NJ
DESTINATION : OCEAN COUNTY GREAT PARK, IRVINE, CA

DISTANCE: 2,800 MILES

ESTIMATED TRAVEL TIME: 7-10 DAYS

PRIMARY TRANSPORTATION UNITS:

TWO (2) TRUCKS AND TRAILERS CARRYING A 36' X 13' X 11' PREFABRICATED MODULES ('WET' & 'DRY') EACH REPRESENTING ONE HALF OF THE STEVENS HOUSE. THESE MODULES WILL CONTAIN ALL MEP EQUIPMENT AND SERVICE RUNS.

ONE (1) TRUCK AND TRAILER CARRYING THE 8 ELEMENTS THAT COMPRISE THE PREFABRICATED MAIN ROOF PORTION OF THE STEVENS HOUSE.

ONE (1) TRUCK AND TRAILER CARRYING THE REMAINING ELEMENTS THAT COMPLETE THE STEVENS HOUSE INCLUDING ALL SITE AND COMPETITION SPECIFIC OBJECTS (ie WATER TANKS, PLANTING, DECKING).

HEAVY LIFTING:

A LULL EXTENDED BOOM FORKLIFT WILL BE USED IN VARIOUS CAPACITIES ON SITE DURING ASSEMBLY, BUT WILL FOCUS OF ASSEMBLY OF THE PREFABRICATED ROOF ELEMENTS OF THE HOUSE. AT NO POINT SHALL WE EXCEED 75% LIFTING CAPACITY AS ALL BUILDING ELEMENTS ARE DESIGNED TO FALL UNDER THIS LIMIT.

STRUCTURAL CONSIDERATION FOR MODULE TRANSPORT:

ALL INTERNAL PARTITIONS ARE SHEATHED IN 1/2 PLY TO PROVIDE SHEAR SUPPORT DURING THE TRIP FROM HOBOKEN. THE 'OPEN' NORTH SIDE OF THE 'WET' MODULE & THE 'OPEN' SOUTH SIDE OF THE 'DRY' MODULE SHALL HAVE A TEMPORARY 2X4 WALL IN PLACE FOR THE TRIP FROM HOBOKEN. THIS WALL WILL BE REMOVED ONCE ASSEMBLY BEGINS IN IRVINE, CA.

EQUIPMENT TO BE USED DURING SITE OPERATIONS

TRUCKS/ TRAILERS/ HEAVY MOVING		
QUANTITY	TYPE	DESCRIPTION
2	TRAILER	48' SPECIALIZED DOUBLE DROP RGN. 30TON CAPACITY, 18" DECK HEIGHT, TANDEM AXLE, AIR RIDE, ALL STEEL WHEELS.
1	TRAILER	48' SINGLE DROP TRAILER. DROP DECK SPREAD AXLE, AIR RIDE, ALL STEEL WHEELS.
3	LARGE TRUCK	KENWORTH TRUCK. 59,200 LBS. WHEEL BASE 202", REAR END RATION - 3.91, TIRE SIZE - 11R24.
1	MOVERS TOOL TRUCK	20' 1 TONNE TOOL TRUCK
1	MOVERS ESCORT TRUCK	20' 1 TONNE ESCORT TRUCK
1	TELEHANDLER	LULL MODEL 944E-42, 9,000 LBS RATED CAPACITY, 42' MAXIMUM LIFT HEIGHT, 28,350 LBS OPERATING WEIGHT.
4	GENERATOR	HONDA GENERATOR EU6500ISA - SUPER QUIET: 60 dB(A), 6500 watts, 120/240V
1	UNIFIED HYDRAULIC JACKING SYSTEM	HYDRAULIC TOE JACKS - BU 20,000. 10 TONNE. ENERPAC PUMP SYSTEM
1	SITE OP'S TOOL TRUCK	20' BOX TRUCK
GENERAL CONSTRUCTION		
QUANTITY	TYPE	DESCRIPTION
2	SCAFFOLD	PRO JAX UTILITY SCAFFOLD SINGLE UNIT WITH GUARD RAIL. 1000 LBS RATED CAPACITY.
2	FLOODLIGHTS	BULL DOG WORK LIGHT. TWIN 500 WATT BULBS.



ECOHABIT
STEVENS SOLAR DECATHLON 2013

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MARK	DATE	DESCRIPTION
1	OCT. 11, 2012	DESIGN DEVELOPMENT
2	NOV 26, 2012	DD RESUBMISSION
3	FEB 14, 2013	CONSTRUCTION DOCUMENTS
4	APR 5, 2013	CD RESUBMISSION
5	AUG 22, 2013	AS-BUILT SUBMISSION

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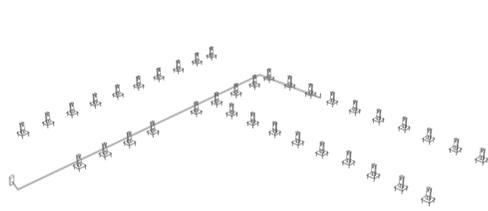
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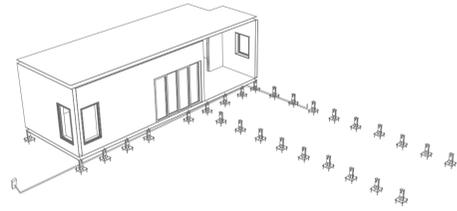
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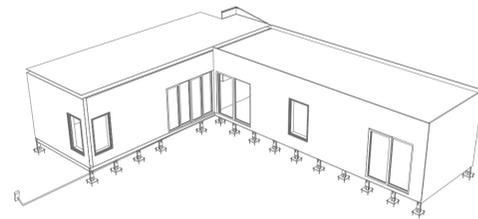
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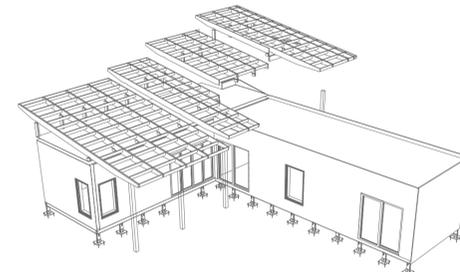
- PLACE AND SECURE ALL HOUSE FOUNDATIONS
- LAY OUT CONDUIT FOR HOUSE MAIN POWER CONNECTION TO MICRO-GRID



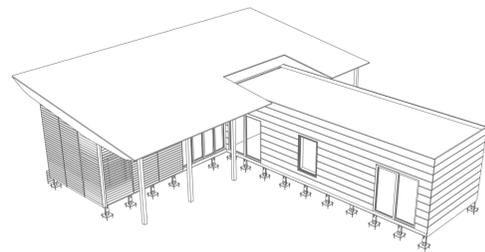
- INSTALL DRY MODULE ON FOUNDATIONS
- SECURE DRY MODULE ON HOUSE'S FOUNDATIONS



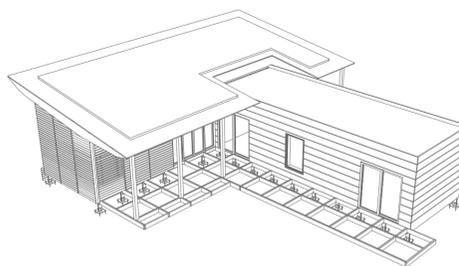
- INSTALL WET MODULE
- SECURE WET MODULE ON HOUSE'S FOUNDATIONS
- STRUCTURALLY CONNECT THE DRY AND THE WET MODULE TOGETHER
- MAKE ALL MECHANICAL & ELECTRICAL CONNECTIONS BETWEEN THE TWO MODULES
- CONNECT ELECTRICAL CONDUIT TO MICRO-GRID



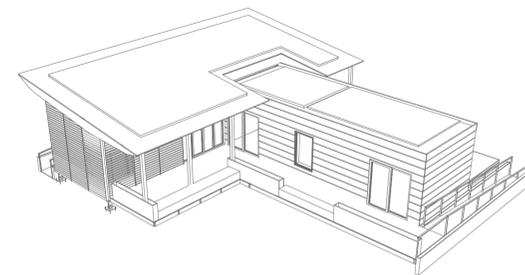
- INSTALL COLUMNS FOR ROOF SUPPORT
- INSTALL RAFTERS ON DRY MODULE



- INSTALL ROOF ON DRY MODULE
- INSTALL RAINSCREEN ON DRY MODULE



- INSTALL SOLAR SHINGLES
- INSTALL DECK STRUCTURE



- INSTALL DECK & PLANTERS
- INSTALL RAILINGS
- INSTALL ROOF GARDEN ON WET MODULE
- INSTALL VEGETABLE GARDEN

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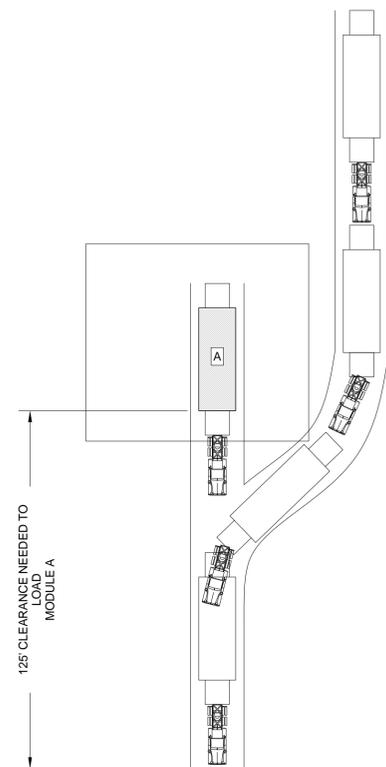
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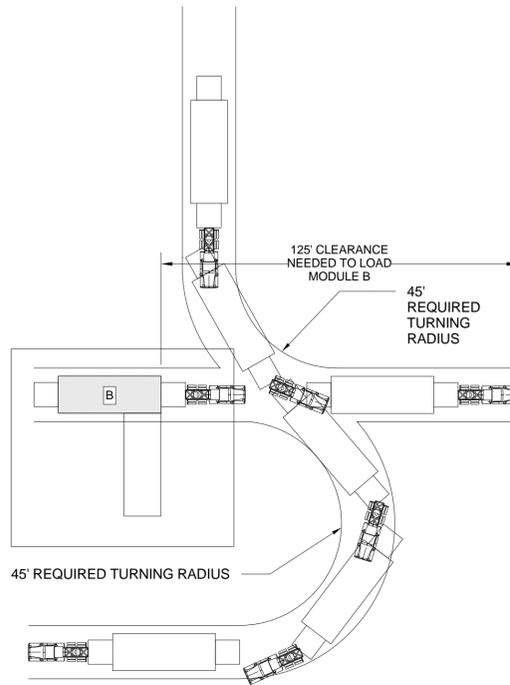
SHEET TITLE

TRUCK LOADING SEQUENCE

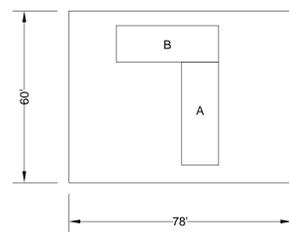
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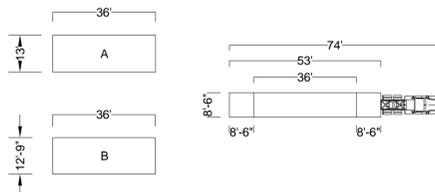
STEP 1 - LOADING MODULE A



STEP 2 - LOADING MODULE B



LOT DIMENSIONS



TRUCK & CARGO DIMENSIONS

A1 TRUCKING SEQUENCE

1/32" = 1'-0"